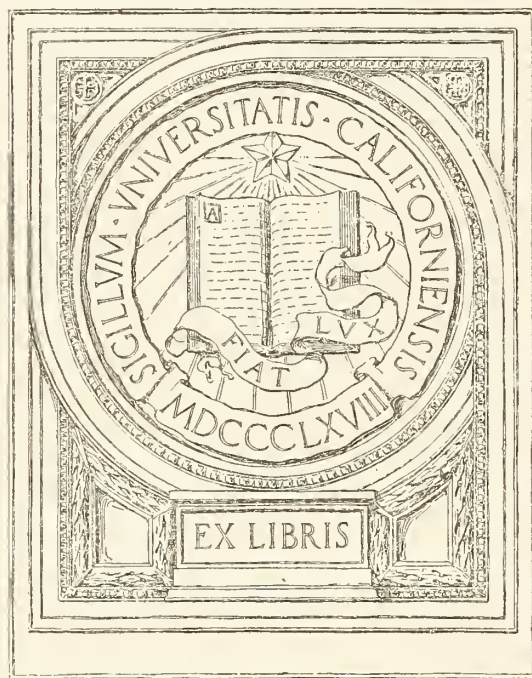
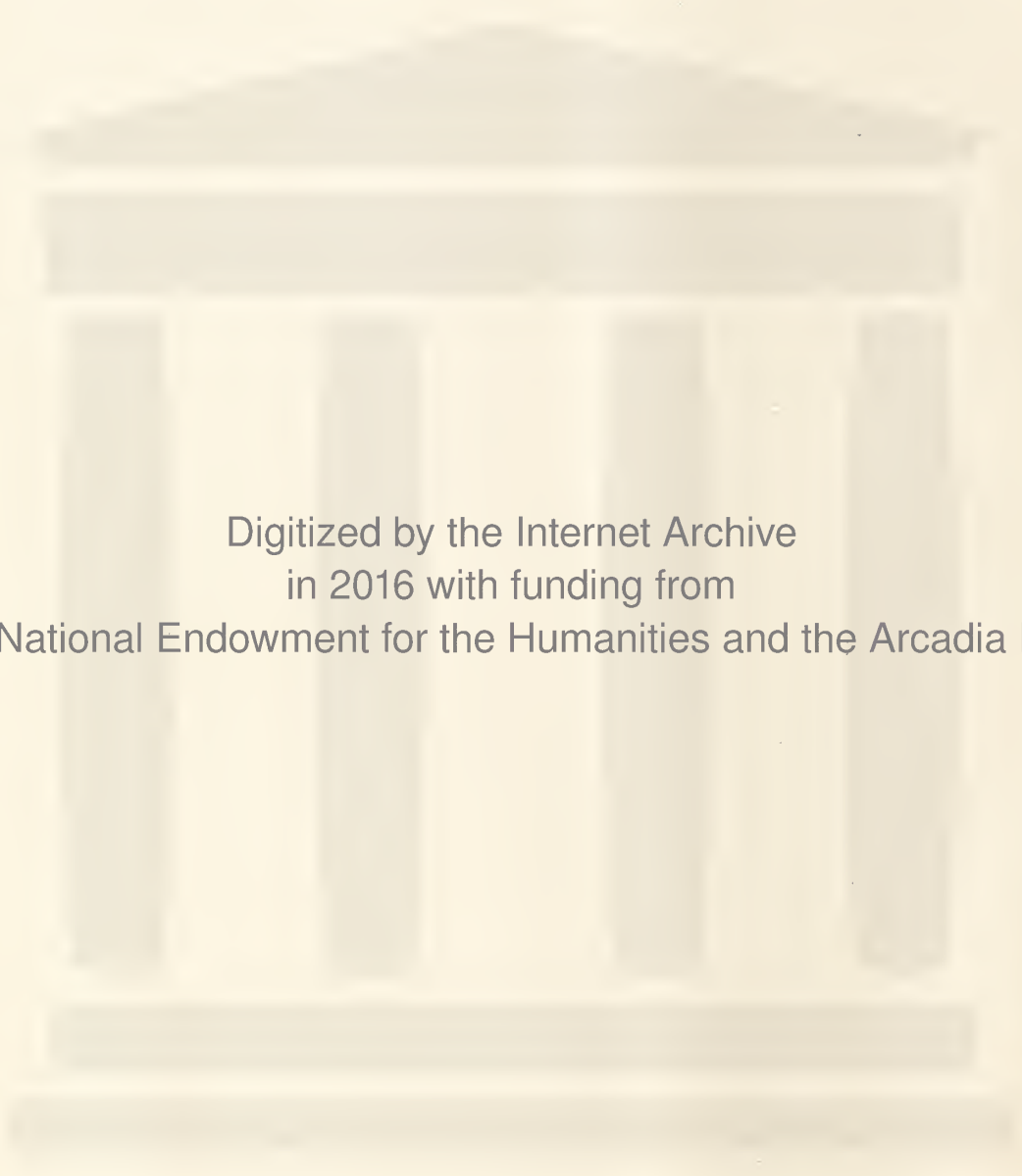


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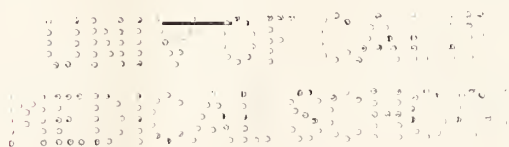
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INDEX

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INDEX

1923

PAGE

A

Abscess of the lung, W. W. Bowen.....	142
Accommodation artificially produced, Diminishing, Royal F. French	135
Act by the General Assembly of the State of Iowa to Accept the Provisions and Benefits of an Act of Congress—Approved November 21, 1921, Relating to the Appropriation for Hygiene of Maternity and Infancy and Other Purposes.....	256
For the promotion of the welfare and hygiene of maternity and infancy.....	254
Actinomycosis, Diagnosis and treatment, Paul A. White.....	105
Human	34
American Press League.....	78
Social Hygiene Association.....	30
Society for the Control of Cancer.....	30
Anomalies of the esophagus—with case report, T. D. Kas and H. L. Avery.....	275
Antivivisection vote in Colorado.....ad. p. xvi, March	
Appendicitis, and cholecystitis, Fat reactions in, Anatole Kolodny	346
Appreciation, An, Dr. Agnes Eichelberger.....	319
Artery, Occlusion of central retinal, F. F. Agnew.....	83
Association of American Medical Colleges.....	367

AUTHORS—

Agnew, F. F.....	83
Andrews, Edmund	503
Augustine, Jasper L.....	370
Avery, H. L.....	275
Bacon, Charles S.....	15
Beye, Howard L.....	495
Bierring, Walter L.....	177
Bishop, Ernest S.....	463
Bloomfield, J. H.....	514
Boice, C. A.....	335
Bowen, W. W.....	142
Brereton, Harold L.....	415
Cabot, Hugh	153
Crabb, George M.....	204
Crowley, Daniel F.....	195
Dodd, John M.....	506
Downing, Wendell	201
Drueck, Charles J.....	350
Eisendrath, Daniel N.....	25
Enfield, Charles D.....	148
Fagan, Rodney P.....	327
Fairchild, Sr., D. S.....	25, 158, 279, 472
Fay, Oliver J.....	239
Field, Cyril G.....	48, 382
Foster, Nellis B.....	52
French, Royal F.....	135
Geissinger, J. D.....	198
Ghent, M. M.....	56
Gratiot, H. B.....	186
Greenhill, J. P.....	456

PAGE

Hansen, Hans	388
Harkness, G. F.....	331
Harris, Malcolm L.....	441
Hedblom, Carl A.....	21
Hejinian, A. G.....	372
Henninger, L. L.....	224
Herrick, John F.....	226
Hinman, Jack J.....	343
Ivins, Henry W.....	272
Jameson, Robert E.....	284
Jepson, William	5
Johnston, William H.....	493
Jones, Cecil C.....	500
Joynt, Martin J.....	45
Kas, T. D.....	275
Kessel, George	1
Kolodny, Anatole	243, 346
Lillie, Harold I.....	403
McCrea, Eppie	365
Mayo, William J.....	233
Morrison, O. C.....	145
Morse, John Lovett.....	422
Murray, Frederick G.....	87
Naftzger, Jesse B.....	367
Nyzum, Thomas W.....	427
O'Gent, Rudolph J. E.....	460
O'Donoghue, Arch F.....	151
Parker, Ralph H.....	491
Pearson, W. W.....	408
Pettit, Joseph A.....	352
Pfeiffer, Harry E.....	229
Plummer, George A.....	499
Prentiss, Henry J.....	261
Reed, Charles A. L.....	94
Rock, J. E.....	331
Rodda, F. C.....	511
Ruth, C. E.....	130
Saunders, Charles J.....	221
Sayre, Reginald H.....	385
Schilling, Nicholas	445
Shellito, Judd C.....	267
Shuman, John W.....	517
Small, W. B.....	41
Somers, P. E.....	377
St. Onge, J. A.....	430
Steindler, Arthur	277
Stoner, A. P.....	79
Thomas, C. R.....	282
Tuley, Henry E.....	97
VanderBerg, Henry J.....	191
White, Paul A.....	11, 105
Winnett, Edwin B.....	325

B

Bacterial relationship to stone formation, O. C. Morrison.....	145
Breast, Tumors of, William Jepson.....	5
Bronchoscopy and esophagoscopy, W. W. Pearson.....	408

BOOK REVIEWS—

BOOK REVIEWS—

	PAGE	PAGE	
Anesthesia, Regional	253	Capper, Senator Arthur J. of Kansas (Ed.).....	63
Bronchoscopy and esophagoscopy.....	120	Care of our patients before, during and after confinement, J. P. Greenhill.....	456
Central nervous system, Form and function.....	529	Cesarean section, J. H. Bloomfield.....	514
Cerebrospinal fluid	529	Extraperitoneal, Nicholas Schilling.....	445
Chemistry, Applied	ad. p. xvi, March	Chemistry and medicine, P. E. Somers.....	377
Clinical laboratory methods.....	323	Chiropractors and medical defense (Ed.).....	395
Clinical medicine	176	Chronic abdomen, The.....	508
Clinical symptomatology of internal disease.....	322	Circulation, The control of, George Kessel.....	1
Clinics and collected papers of St. Elizabeth's Hospital Richmond, Virginia	490	Communicable diseases among the students of the University of Iowa, C. R. Thomas.....	282
Clinics of North America—Medical	219, 320, 364, 440, 527	Confinement, Care of patients before, during and after, J. P. Greenhill	456
Clinics of North America—Surgical, 78, 259, 364, 489, 490, 530, ad. p. xvi, March		Consolidation of medical journals.....	207
Diagnosis, Physical	220	Cost of maintaining cars.....	523
Dietetics, Lectures on.....	219	Criticism, A friendly (Ed.).....	163
Disease, How we resist.....	220		
Of the nose and throat, Manual of.....	323	D	
Of the rectum, anus and colon.....	321	Defeat of medical bill in Minnesota (Ed.).....	522
Of women	363	Diabetes, Increasing mortality from (Ed.).....	396
Eighteenth amendment and the part played by or- ganized medicine	75	Treatment with insulin, Edwin B. Winnett.....	325
Endocrine glands and sympathetic system.....	119	Diagnosis, French doctor to be tried for false.....	65
Exercise in education and medicine.....	490	From a medico-legal point of view (Ed.).....	392
Fractures, Treatment of.....	ad. p. xxx, April	In medicine, Aid to, Henry Enos Tuley.....	97
Gynecology, Manual of.....	218	In right upper quadrant, Judd C. Shellito.....	267
Heart in modern practice, Diagnosis and treatment.....	363	Of some surgical conditions, Malcolm L. Harris.....	441
Impotency, sterility and artificial impregnation.....	218	Diagnostic surveys by diagnostic commissions for asylum populations, Charles A. L. Reed.....	94
Infant and the young child, The.....	440	Diphtheria holds third place among communicable diseases (Ed.)	395
Inflammation in bones and joints.....	ad. p. xxii, August	Immunization, Improvement in.....	526
Injury, recovery and death in relation to conductivity and permeability	219	Doctrine of the prepared soil: A neglected factor in surgical infections, Hugh Cabot.....	153
Internal medicine	402	Dysthyroidism, Some phases of.....	246
Legal medicine and toxicology.....	401		
Mayo Clinic, Collected papers of.....	74, 488	E	
Medical state board questions and answers.....	489	Early physicians in Iowa, D. S. Fairchild, Sr.....	472
Medicine series, Practical.....	260	Ectopic gestation with report of cases, Thomas W. Nuzum.....	427
Nosography in modern internal medicine.....	527	Editorial co-operation (Ed.).....	393
Nursing, Evolution of public health.....	77	Efficiency in medicine, Eppie McCrea.....	365
Nutrition of mother and child.....	364	Electric injuries, Early and late lesions due to, Oliver J. Fay.....	239
Obstetrics for nurses.....	176	Electronic medicine, Chattanooga Branch College of (Ed.).....	395
Ophthalmoscopy, retinoscopy and refraction.....	77	Empyema, Recent progress in the treatment of chronic, Carl A. Hedblom	21
Parasites and human disease, Animal.....	78	Encephalitis, Diagnostics of epidemic of, C. G. Field.....	382
Pediatrics, Text-book	352	Endocarditis, Sub-acute bacterial, Walter L. Bierring.....	177
Pharmacology and its applications to therapeutics and toxicology, Manual	219	Esophagus, Anomalies of—with case report, T. D. Kas and H. L. Avery.....	275
Physician, The successful.....	218	Extraperitoneal Cesarean section, Nicholas Schilling.....	445
Physiology and biochemistry in modern medicine.....	260		
Physics and chemistry for nurses—Text-book.....	218	F	
Pirquet system of nutrition, Outline.....	220	Fat reactions in appendicitis and cholecystitis, Anatole Kolodny	346
Premature and congenitally diseased infants.....	259	Federal department of health education and welfare (Ed.).....	112
Preventive medicine, An introduction to practice.....	322	Fee-splitting	476
Propaganda for reform proprietary medicines.....	76, 260	Feeding of the normal baby, A consideration of some practical problems in artificial, J. D. Geissinger.....	198
Psychology, Elements of scientific.....	176	Field Activities Committee, Meeting of.....	65
Psychology for nurses, Applied.....	489	Some of the things achieved by.....	291, 525
Riddle of the Rhine, chemical strategy in peace and in war	321	Fistula of the rectum, Charles J. Drucek.....	350
Skin, Diseases	75	Foreign body in the eye-ball, An experience with some cases of, W. B. Small.....	41
Surgery, Essentials	321	Medical degrees not recognized in Mexico.....	24
Thyroid gland, Disease.....	ad. p. xvi, March	Fracture of the patella, Jasper L. Augustine.....	339
Tonsils, The	528	Treatment and results, John M. Dodd.....	506
Transactions of the College of Physicians, Philadel- phia	76, 527		
Tuberculosis, Lessons on.....	120	G	
Pulmonary	259	Gall-bladder disease, Points in diagnosis chronic, C. D. En- field	148
Washington School of Medicine, Collected papers.....	530	Function of, George M. Crabb.....	204
X-Ray technique for diagnosis, The principles and practice	75	Gift of \$2,250,000 to State of Iowa (Ed.).....	109
		Goiter, Prevention of simple.....	518
		Problem, John W. Shuman.....	517
		Gorgas, William C., Memorial Institute to memory of (Ed.).....	161
		Great men in the practice of medicine. The passing of (Ed.).....	211

C	
Cancer of breast—with case report, Hans Hansen.....	388
Cancer week, Value.....	69
Canal zone, Excluding disease from (Ed.).....	248
Health conditions in (Ed.).....	108
Tolls for September.....	522

14013

	PAGE	PAGE
H		
Hay Fever (Ed.)	393	
Healing the sick by prayer (Ed.).....	62	
Health officer in protecting the public water supply, Responsi- bility of, Jack J. Hinman.....	343	
Examinations (Ed.)	520	
Field, New magazine in.....	Adv. p. xx, Dec.	
Hemorrhage into the vitreous, Recurrent, Martin J. Joynt....	45	
Hemorrhagic diseases of new-born, F. C. Rodda.....	511	
Herniotomy, Some contraindications, Edmund Andrews.....	508	
Hospital notes	38, 116, 174, 257, 318, 360, 399, 439, 486	
Hoyt Sherman Place, Home of Des Moines Women's Club....	432	
Hydatidiform mole	160	
Hygeia, The A. M. A., new health magazine..	217, ad. p. xvi, Feb.	
Hyperemesis gravidarum, Daniel F. Crowley.....	195	
Hypersensitiveness to foods as a cause for abdominal pain....	33	
Human body worth? What is the.....	481	
I		
Ignorance of the law excuses no man.....	437	
Increase in hospital fees.....	391	
Indemnity defense insurance against malpractice (Ed.).....	522	
Indigestion in childhood, Chronic, John Lovett Morse.....	422	
Infants, Acute suppurative otitis media, Cecil C. Jones.....	500	
Mastoiditis in, W. H. Johnston.....	493	
Infection of bone and sarcoma bone, Differential diagnosis be- tween, Howard L. Beyce.....	495	
Infections, Doctrine of the prepared soil neglected factor in surgical, Hugh Cabot.....	153	
The major, William J. Mayo.....	233	
Injuries, Early and late lesions due to electric, Oliver J. Fay..	239	
Insulin in the treatment of diabetes mellitus, Present status of (Ed.)	286	
Treatment of diabetes with, Edwin B. Winnett.....	325	
Therapy (Ed.)	450	
Intestinal obstruction, M. M. Ghent.....	56	
Iodines in the treatment of syphilis, Robert E. Jameson.....	284	
Iowa, A protest from.....	129	
Roads and bridges.....	523	
State Medical Library, Recent additions.....	118	
State University gift (Ed.).....	61	
State University receives \$450,000 appropriation (Ed.)....	208	
State University news notes, 34, 66, 113, 164, 210, 249, 315, 357, 396, 437, 484, 523		
J, K, L, Mc		
Journal Medical Sciences, American.....	64	
Keen, Dr. W. W. (Ed.).....	395	
Lesions due to electric injuries, Early and late, Oliver J. Fay..	239	
Lung, Abscess of, W. W. Bowen.....	142	
McCrae, John, In memoriam.....	33	
M		
Marriages	116, 217, 257, 362, 487, 527	
Mastoid operation, Methods for promoting rapid healing sim- ple, L. L. Henninger.....	224	
Mastoiditis in infants, W. H. Johnston.....	493	
Mayo, Dr. W. J. receives high honors (Ed.).....	396	
Medical education (Ed.).....	31	
Defense supplementary report, Committee (Ed.).....	521	
Ethics (Ed.)	482	
Examiners, national board (Ed.).....	32	
Library gift	397	
Women organize, Chicago council.....	397	
News notes	39, 69, 173, 213, 253, 360, 487, 524	
Medicine, Aids to diagnosis in, Henry E. Tuley.....	97	
Facing the new day in, A. P. Stoner.....	79	
Memoriam, In, John McCrae.....	33	
Milk from medical standpoint, Market, F. G. Murray.....	87	
Muscle rigidity, Diagnostic value, C. A. Boice.....	335	
N		
Narcotic drug addiction and narcotic laws, Ernest S. Bishop...463		
Nasal passages with special reference to the upper regions, Obstructions, Harry W. Ivins.....	272	
New apostle of healing (Ed.).....	62	
And non-official remedies, 324, 402, ad. p. xvi, Feb.; xxx, April; xx, Nov.; xx, Dec.		
York Medical Journal and Medical Record, Dr. Strag- nell, new editor.....	30	
O		
OBITUARY—		
Alexander, Thomas C.....	361	
Anderson, E. K.....	40	
Babcock, Amos	475, 487	
Baird, Burton Argyle.....	400	
Barnes, Henry E. W.....	361	
Barrett, J. W.....	440	
Battin, James F.....	74	
Becker, Frederick	258	
Bickley, John G.....	401	
Biggs, Herman M.....	440	
Blake, Charles W.....	257	
Bogan, William L.....	257	
Brackett, Wallace M.....	216	
Bryant, Charles H.....	40	
Cavanagh	213	
Chapman, Mrs. R. U.....	216	
Chinn, D. J.....	258	
Cole, J. F.....	320	
Culverson, F. P.....	320	
Dunlavy, J. C.....	117	
Dunn, Harry T.....	440	
Eichelberger, Agnes	214, 215	
Engle, Theodore	361	
Farnsworth, David W.....	117	
Farrell, J. S.....	216	
Gilmore, John E.....	217	
Gould, George M.....	217	
Griffy, Benjamin Ward.....	216	
Hague, A. S.....	217	
Harwood, George	215	
Hawk, Nathan Fremont.....	362	
Hazen, Edward Hamlin.....	440, 474	
Hostetter, John I.....	215	
Huffman, J. W.....	215	
Hull, Joseph H.....	40, 116	
Hunter, William W.....	214	
Hurlburt, DeLoss	401	
King, J. E.....	215	
Knittle, E. H.....	319	
Landes, A. C.....	257	
Leipziger, H. A.....	320	
Livingston, Hugh	258, 473	
Luckey, George M.....	257, 320	
McKinnis, Charles	487	
MacFarlane, Thomas	258	
Mackey, C. A.....	320	
Magee, Ira J.....	362	
Martin	439	
May, George W.....	400	
Mingle, David H.....	117	
Muskens, John P.....	487	
Neff, George E.....	40	
Nixon, Samuel E.....	216	
North, John Edward.....	214	
O'Connor, Thomas G.....	217	
Ogden, Aaron Browdy.....	488	
Owen, William R.....	216	
Perkins, Louis J.....	361	
Peterson, Arthur J. P.....	440	
Quigley, W. A.....	215	
Rentz, Charles Bernard.....	439	
Roome, Charles D.....	362	
Satterlee, Dwight	257	
Schultze, William Chambers.....	401	
Seymour, F. E.....	214	
Shattuck, George B.....	362	
Shelton, E. J.....	215	

	PAGE
Simonds, Justin F.	472
Slattery, William P.	40, 74
Smith, Samuel J.	216
Stanley, Horace M.	258
Strout, Alfred O.	258
Sumner, Guilford H.	361
Sweet, Hartford	440
Thompson, Benjamin	319
Thornton, John H.	74
Van Amberg, J. B.	258
Vogt, William J.	319
Wahrer, Charles F.	72
Waterhouse, George S.	401
Whitney, Charles R.	175
Williams, Edward M.	73

Obstetrical problems involved in still-births and deaths of new-born infants, Some, Charles S. Bacon.....	15
Obstruction nasal passages with special reference to upper regions, Harry W. Ivins.....	272
Occlusion of central retinal artery, F. F. Agnew.....	83
Oculists, optometrists and optical firms.....	483
Opportunities and means of giving patients consulting the surgeon a better service, Henry J. Vanden Berg..	191
Oration in surgery, C. E. Ruth.....	130
Oregon State Medical Association (Ed.).....	356
Orphanage, Damages	518
Orthopedic diagnosis, Errors, Reginald H. Sayre.....	385
Otitis media in infants, Acute suppurative, Cecil C. Jones.....	500
Ottumwa, Iowa, The city of.....	126

P and Q

Panama Canal (Ed.).....	355
Zone (Ed.)	208
Passing of great men in the practice of medicine (Ed.).....	210
Patella, Fracture of, Jasper L. Augustine.....	339
Patients consulting the surgeon, Better service, opportunities and means of giving, Henry J. VandenBerg.....	191
Pennsylvania Medical Journal.....	211
Peritonitis and its treatment, Spreading, A. G. Hejiniian.....	372
Post-operative treatment of, Harry E. Pfeiffer.....	229
Personal mention, 39, 71, 116, 175, 213, 252, 285, 360, 400, 438, 486, 527	
Physicians who located in Iowa in the period between 1850 and 1860, D. S. Fairchild, Sr.....	27, 158
In the period between 1860 and 1870, D. S. Fairchild, Sr.....	279
Physio-therapeutic week in Kansas City.....	129
Placenta praevia, George A. Plummer.....	499
Poliomyelitis, Anterior—a review of thirty sporadic cases, Cyril G. Field.....	48
Post-operative comfort in tonsil cases, G. F. Harkness and J. E. Rock.....	331
President's Address, Charles J. Saunders.....	221
Problems relating to the practice of medicine, Some (Ed.)....	287
Proceedings House of Delegates (Ed.).....	289
Propaganda for reform, 324, ad. p. xxii, Aug.; xx, Sept.; xx, Nov.; xx, Dec.	
Prostate, Hypertrophy of, Anatole Kolodny.....	243
Prostatectomy in poor surgical risks, Rudolph J. E. Oden.....	460
Public Health Legislation, The needs of the state, Rodney P. Fagan	327
Pyloric stenosis of infancy, Harold L. Brereton.....	415
Quadrant, Diagnosis in the right upper, Judd C. Shellito.....	267

R

Rachicentesis or spinal drainage in convulsions, J. A. St. Onge	436
Railroad crossing accidents.....	523
Reed, Dr. C. A. L., activities as a publicist (Ed.)	522
Report of Major Edgar A. Bocock, M.C.U.S.A., Superintendent Hospital Santo Tomas, Annual (Ed.).....	478
Respiratory tract, Some practical considerations of the physiology of upper, Harold I. Lillie.....	403
Russia, American doctor writes medical needs.....	314

	S	PAGE
Santo Tomas Hospital, Panama (Ed.).....	477	
Annual report of Major Edgar A. Bockock, M.C.U.S.A., Superintendent (Ed.)	478	
Sarcoma of bone, Differential diagnosis between infection bone and, Howard L. Beye.....	495	
"Sleeping sickness"	207	
Small-pox and vaccination (Ed.).....	394	

SOCIETY PROCEEDINGS—

American College of Surgeons, Clinical congress of	
the Iowa and South Dakota sections.....	172
Association for the study of goiter, Meeting.....	525
Congress on internal medicine, Annual Clinical session	67
Medical Association San Francisco meeting.....	125, 167
X-Ray Society, Sectional meeting of.....	38
Audubon county medical society.....	170
Austin Flint-Cedar Valley medical society.....	399
Boone county medical society.....	37, 170, 211, 316, 358, 524
Botna Valley Medical Society.....	524
Buchanan county medical society.....	37, 115, 316
Butler county medical society.....	316, 524
Calhoun county medical society.....	37, 115, 170, 524
Carroll county medical society.....	170
Cass county medical society.....	170, 250, 525
Cedar Valley medical society.....	485
Cerro Gordo county medical society.....	115
Clinton county medical society.....	37, 398
Crawford county medical society.....	316
Davis county medical society.....	398
Decatur county medical society.....	250
Des Moines county medical society.....	115
Valley medical society.....	359, 398
Dubuque county medical society.....	115, 397
Fayette county medical society.....	358, 398, 437
Fremont county medical society.....	316
Hamilton county medical society.....	170
Hancock-Winnebag county medical society.....	37, 67
Hardin county medical society.....	37, 438
Harrison county medical society.....	67, 115, 317
Henry county medical society.....	115
Ida county medical society.....	250, 317
Iowa and Illinois central district medical ass'n.....	172, 485
Clinical medical society.....	171, 525
County medical society.....	317
State Medical, committee on arrangement report Ottumwa session	419
Minutes seventy-second annual session.....	292
Officers	246
Preliminary announcement Ottumwa meeting 65, 123 Program seventy-second annual session.....	121
Transactions House of Delegates seventy-second annual session	296
Jasper county medical society.....	171
Johnson county medical society.....	37, 115
Linn county medical society.....	358, 485
Mahaska county medical society.....	67, 485
Marion county medical society.....	37, 525
Marshall county medical society.....	37, 171, 358
Mills county medical society.....	116, 171
Mitchell county medical society.....	398, 485
Northwestern Iowa medical society.....	251
Oregon state medical association.....	356
Page county medical society.....	116, 358
Palo Alto county medical society.....	359
Panama medical society (Ed.).....	212
Plymouth county medical society.....	116, 250
Polk county medical society.....	67, 171, 211, 317
Poweshiek county medical society.....	171
Sac county medical society.....	250, 317
Scott county medical society.....	38, 171, 250
Sioux Valley medical association.....	251, 438, 525
Southeastern Iowa medical society.....	38

	PAGE		PAGE
Southwestern Iowa medical society.....	251, 485		
State society of Iowa medical women twenty-sixth annual session	107, 124, 313		
Tama county medical society.....	68, 318		
Taylor county medical society.....	212		
Tri-State district medical association.....	212		
An appreciation (Ed.).....	432		
Des Moines meeting (Ed.).....	519		
Eastern clinic	107		
Meeting at Des Moines (Ed.).....	392		
Program Des Moines meeting.....	433		
Twin Lakes district medical society.....	172		
Upper Des Moines medical association.....	172, 399, 438		
Van Buren county medical society.....	398, 433		
Wall Lake district medical society.....	359		
Wapello county medical society.....	68		
Wayne county medical society.....	68		
Woodbury county medical society.....	171, 318		
Worth county medical society.....	251		
Spinal puncture as an aid to diagnosis and therapeutics. John F. Herrick	226		
Still-births and deaths of new-born infants, Some obstetrical problems involved. Charles S. Bacon.....	15		
Stone formation, Bacterial relationship to, O. C. Morrison....	145		
Stragnell, Dr., new editor of New York Medical Journal and Medical Record	30		
Stridor and dyspnoea in childhood, Jesse B. Naftzger.....	367		
Suicides in 1922.....	505		
Surgery, Newer aspects of urinary, Daniel N. Eisendrath....	25		
Of the thyroid gland, Paul A. White.....	11		
Surgical conditions, Diagnosis of some, M. L. Harris.....	441		
Diseases of the urinary organs, A plea for early recognition, Wendell Downing.....	201		
Infections, Doctrine of the prepared soil, neglected factor, Hugh Cabot	153		
Reconstruction of the paralytic upper extremity, Arthur Steindler	277		
Surveys by diagnostic commissions for asylum populations, Diagnostic, C. A. L. Reed.....	94		
Synthetic drug industry, Protection.....	64		
Syphilis, Iodines in treatment, Robert E. Jameson.....	284		
Syphilitic backache	66		
		T	
		Thoracic content as observed in the anatomical laboratories of the State University, Some variations in, Henry J. Prentiss	261
		Thyroid gland, Surgery of, Paul A. White.....	11
		Tonsil cases, Post-operative comfort, G. F. Harkness and J. E. Rock	331
		Tri-State District Medical Association, An appreciation (Ed.)....	432
		Des Moines Meeting (Ed.).....	519
		Eastern clinic	107
		Meeting at Des Moines (Ed.).....	392
		Program	433
		Tuberculosis, Decline in (Ed.).....	109
		Tumors of breast, William Jepson.....	5
		U and V	
		United States civil service examination.....	483
		Veterans' bureau	35
		Uterine malpositions, Surgical aspects of, Joseph A. Pettit....	357
		Urinary organs, Surgical diseases: A plea for early recognition, Wendell Downing.....	201
		Surgery, Newer aspects of, Daniel N. Eisendrath.....	25
		Valgus with dislocation in Lisfranc's joint, Traumatic, Arch F. O'Donoghue	151
		Vascular renal disease, The diagnosis of, Nellis B. Foster....	52
		Vitreous, Recurrent hemorrhage into, Martin J. Joynt.....	45
		Vivisection	39
		W	
		War loss in population.....	21
		Wassermann test in ophthalmology, Routine, H. B. Gratiot....	186
		Welch, Dr. William H., Honors to.....	518
		What Iowa is doing, Ralph H. Parker.....	491
		Yellow fever at Bucaramanga, Colombia.....	522
		PORTRAITS—	
		Babcock, Amos	476
		Brown, Horace Manchester.....	opposite page 403
		Hazen, Edward Hamlin.....	474
		Livingston, Hugh	473
		McCrea, Eppie	opposite page 365
		Middleton, W. D.....	281
		Saunders, C. J.....	opposite page 121

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THE CONTROL OF THE CIRCULATION*

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Surgery has been in the melting pot bubbling and boiling now for many generations, many centuries in fact, until at the present time it has simmered down to the consistency which may be summed up in the words "The Control of the Circulation." This subject is a big one, perhaps too big for one hailing from Main street to handle. Happily there is the other side of Main street where the soil is fertile and will kindly receive the few grains of thought that may happen to fall. Anyway, it is more blessed to give than to receive, but it is harder to do. Therefore if all will listen patiently, the purpose of this paper will have been accomplished.

In a consideration of this subject the first question that suggests itself is, "What is the circulation?" For the answer we must appeal to the scientists—to the anatomist for the structure, to the physiologist and the physicist for the function, to the bacteriologist and the pathologist for the diseases of the circulation. All these questions must be passed up because it is assumed that the surgeon is well-grounded in all of them, because they are fundamental, they are the very rocks on which the surgeon must build his career if he would have it stand. He must not only be well-grounded in them at the outset, but must join the fraternity of the great teachers and have their works on his library table ready at hand for frequent reference, and the more frequently he refers to them the more he will be convinced that he is dealing with an organism that is fearfully and wonderfully made, animated and controlled by a brain and nervous system about which much is known but of which much yet trails far out into the unknown. It remains for the physiologist and the physicist of the future to test out this great human battery composed as it is of an infinite number of individual cells, each cell sending out its life-giving energy to some other cell in

some other organ of the body. This ceaseless activity is so well expressed by one of our great physicians that I cannot refrain from quoting the following paragraph:

Man's body is the most marvelous chemical laboratory in the world, a laboratory made up of several thousand billions of separate work rooms, in each of which the amount and kinds of work done differ somewhat from those in each of the others. No two liver cells, probably, are precisely alike in their chemical activities. In a single mucous membrane, the chemistry of the constituent gland cells differs markedly from the chemistry of the constituent nerve cells, connective tissue cells and smooth muscle cells. Within the channels of communication that carry fluids and solids about the great laboratory from work room to work room, chemical changes are constantly going on in the transported materials. Even the walls, the beams and the furniture of the billions of work rooms are themselves constantly undergoing chemical change. We are awed enough by the complexity of the chemical processes that go on in health; but let us not forget that in the diseased body this complexity becomes manifold.

It is rather academic and seems like a waste of time to call attention to these fundamental principles which are admitted and which every trained physician knows, but the busy surgeon, wearied and worried by the responsibilities which hang like millstones about his neck both day and night, must often be reminded of the things which pertain to his own salvation and therefore to the salvation of his patients.

THE CONTROL OF THE CIRCULATION

"The Control of the Circulation," what is it? The natural and easy answer would be technic. That also must be passed up because technic is at the present time well standardized. Every surgeon knows that he must have a thorough and complete hemostasis in order to have a dry wound; that he must not allow any pathogenic germs to enter the wound during the operation or during the time of its repair; that he must handle the tissues with utmost gentleness in order that traumatism may be reduced to the minimum;

*Chairman's Address, Surgical Section Iowa State Medical Society, Des Moines, Iowa, May 10, 11 and 12, 1922.

that he must not unduly depress his patient by a prolonged and heavy anesthesia; that he must be informed in the later teachings on the coagulation point of the blood, the alkaline balance of the blood, and that there must be sufficient water in the tissues to supply moisture and oxygen to the cells. A clean and efficient technic, promptly and gently executed, is of superlative importance and must never be lightly undertaken. But there is something which precedes and determines the results of any and every technic, and that is rational diagnosis.

It is difficult to stick exclusively to the text because the question of diagnosis, like Banquo's ghost, will not down. On the first page of one of the recent books on surgery is the following quotation: "The most important part of my business is to know what ought to be done." This is a good motto and ought to have the most prominent place in every doctor's office.

The great demand of the hour is that we make use of the knowledge we have and day by day correct it. Centuries of clinical experience and observations now recorded in a multitude of medical books and magazines have given their contribution to the cause of suffering humanity. It is up to us now to readjust, systematize, and harmonize these data. We must revise what we have acquired and extend its domain, for knowledge is power. Today we can correct the errors of yesterday and tomorrow we may obtain new light on what we think we are sure of today. New pathological knowledge suggests a new physiology and the inter-reactions reveal the morbid relations which we observe and classify, interpreting their significance, and by so doing work out a diagnosis. The relation of pathology to diagnosis is fundamental, but the basis, after all, is morbid anatomy, and underlying this is morbid physiology which precedes and determines the final analysis. It is the application of the data given us by the laboratory that demands our attention today. To discover the wonders of the laboratory is one thing, to bring its discoveries into harmonious relations is another and a much harder thing to do. The reasons for this are to be found in the nomenclature handed out to us by the laboratory and by a busy multitude of clinical writers the world over. Up to the present time we have been occupied in the study of organs and their changes. We have applied specific terms to structural alterations and have divided and subdivided until now we have a sort of kaleidoscopic picture of the whole. We have looked for the origin of these changes in the altered condition of the elemental unit, the cell, and

have worked out a classification upon the true and logical hypothesis that morbid anatomy is primarily cellular. We have too much allowed ourselves to conclude that disease manifestations are single and capable of existing only in local relation, ignoring the complete interaction of all bodily parts. Hence, we have outlined and classified the gross histologic departures from the normal, and to each departure we have given a specific name supposed to designate the disease, and up to that point have utterly failed to make a rational diagnosis. Our advance must no longer be anatomic. We cannot solve the problem of disease by the study of structure, however important and enlightening. We have no other alternative but the study of process, and through that we must find the origin of disease. In this straight and narrow path we must travel, if we would reach the goal of our desire, viz., a rational diagnosis.

Consider, for example, the general aspect of infection. Surgically, we consider disease pictures as elaborations of septic possibilities. The site of infection, the structural peculiarities, even the organ involved, are subordinate to the type of infection. Morphologically, identical agents produce the widest divergence of results. The physiology of the microorganism is the standard of its power and the results of its implantation are regarded as the strife of biologic antagonists affecting the whole economy rather than as organic disease to which the infective agency is incidental.

We talk of tonsillitis, of diphtheria, of croup, and otitis media, of cystitis, metritis, pneumonia and meningitis, emphasizing all the time the anatomic relation instead of the infective. Much of the tonsillitis, otitis, pulmonitis, phlebitis, and meningitis, is due to pneumococcus infection. This same group of words is used to cover a series of morbid conditions caused by the streptococcus. In simple cases of sore throat, for instance, every physician knows that the clinical diagnosis cannot be made, and a series of similar looking cases may be infections with streptococcus or pneumococcus or true diphtheria. Under these circumstances the use of the term tonsillitis, follicular tonsillitis, and all the rest, is but a provisional measure while we await the report of the bacteriologist. But we must not stop here—we must forever be dissatisfied with the method and adopt the habit of regarding all such things as infections of a definite type before we lay claim to a definite diagnosis.

Let us take a bird's-eye view of that large class of intoxications occurring outside of the tissues

but within the body, as for example, in the gastrointestinal tract. To such intoxications we apply the term auto-intoxication. Intoxications are capable of inducing many indirect results, description of which is based upon organic expression, under a name not suggestive of the etiology. In such relations stand much of the bronchitis, arthritis, enteritis, asthma, vasomotor irregularities, and nerve manifestations, such as headache, or neuralgia, or heart irregularities. Many times we find several of these allied conditions co-existing, or first one and then another, in the same individual. How long shall we continue to regard them as entities, unwilling to recognize their dependence upon absorption of toxins or toxic irritation of the local surface, with reflex manifestations variously distributed?

Another group of conditions infinitely more interesting in tracing their kinship, multitudinous in number, whose common genesis is also intoxication and resulting from perverted or defective metabolism. This group is more interesting and important because it nearly represents the essential or vital possibilities, often hereditary, of the individual, not infrequently presenting from birth to age a consistent series of totally unlike phenomena, which are, nevertheless, expressions of the same disturbance modified in form by age. A common finding in this group of individuals is arteriosclerosis, or other forms of arterial degeneration, which is simply the sum total of all the different infections incident in the life history of the individual. The gist of the matter is, what is the cause of the arterial changes and where must we look to find it? This cause is to be sought in the defects of chemic changes occurring through a long series of years, perhaps from birth. We see the gouty tendencies of the parents cropping out in the eczema of the child, in the periodic attacks of youth, in the neuralgic and rheumatic developments of maturity and in the insidious deteriorations of vital organs more or less prematurely developed, which we call Bright's disease or heart disease or brain disease. Therefore the question is, not what is the form or location of this disease, but what is the source of its origin, and by what process does it develop, or to what extent is this process a constant factor in the life history of the individual?

In the fourth group let us glance at the ductless glands. What we do not know about their secretions and their value in the economy should not discourage us in making an earnest effort to classify what we do know. It is known that the function of the thyroid gland is closely associated with some diseases to which we have given spe-

cific names. The same is true of the supra-renal capsule and of the spleen, not as organs of assimilation nor as participants in general metabolism, but as furnishing distinct contributions or secretions to the body for purposes known to us only in their miscarrying, and the upsets or misconduct they cause in other organs. It is reasonably sure that certain abeyance of functions, or disfunctions, in the adrenals will induce Addison's disease. If it is so potent in its withdrawal or perversion what shall we say as to its influence if it be present in excess? Upon this we have no light. We are somewhat more sure of the function of the thyroid. We know that the withdrawal of thyroid influence beyond a certain point will result in myxœdema. We have here a well-marked, unmistakable picture that is typical of this process. Where does myxœdema begin? How long a period of gradual change before one recognizes the difficulty? There must be conditions dependent upon partial or lessened influence of the thyroid long before typical results appear. Look at this picture from the reverse side, the typical condition dependent upon over-influence of the thyroid which we call exophthalmic or toxic goitre. We know very well the fully developed aspect. Do we realize as fully the pathway that leads toward that full result along which we may expect to find a multitude of cases whose sufferings are unexplainable? These two extreme conditions of bodily perversion, presenting the utmost contrast both of form and function, reasonably well demonstrated to be due to under-thyroidation or over-thyroidation, respectively, afford the most interesting study. If these extremes exist, a priori reasoning, as well as abundant clinical experience, will declare that gradations exist between. The time has come for estimating disease as an expression of the whole in response to morbid influence. If the local features become of importance, accord them their rightful attention, but let us struggle against the folly of regarding hypertrophied nasal mucosa as explanatory of hay-fever, or catarrhal uterine mucosa as of different significance from other catarrh, or either as independent of constitutional conditions.

Our medical investigators up to the present time have been constantly occupied in the search for new signs and symptoms to add to the great unrelated mass we already have and by so doing bewilder us and befog the path of progress. They might well inquire whether our grasp of the phenomena they present is not weakened by the strong current toward technical methods—whether they have not retrogressed from the bed-

side observation of our predecessors—whether we are constructing our vast materials into usable forms as the times require. It is not necessary to know why a pain in the thigh almost invariably is a forerunner of an intestinal explosion, but to consider them independent entities and treat one as rheumatism and the other as colic will not lead us anywhere. This cannot be worked out in the laboratory, nor in the hospital, but it must be and can be done only in the everlasting drudgery of private practice. The mass of pathological data daily streaming in on us from the published literature is simply overwhelming and gives us the impression that pathology is becoming more and more complicated; but such is not the fact. Pathology is becoming more simplified and its principles fewer. Anatomically and organically considered the array of disease is a multitude. It is only necessary to carry our analysis back to the simple systemic vice or defect to which the outbreak is reaction. Then the scales fall from our eyes. If we regard the systemic equilibrium as the central thought in the making of a diagnosis, it follows that the foundation on which to build our diagnostic structure is a knowledge of the normal. This sounds like a truism, but careful observation has often compelled us to admit that herein the most pronounced defects become evident. Between the class of investigators who study only the terminal results—the dead—and the class who study only the diseased individual, the path of progress becomes clogged with bewildering data. We gain smatterings of information, unclassified, and much of it unrelated, but we learn little of process; and hence acquire little power in foreseeing or preventing results.

Medical men are quick to observe the approach of that period of life about which Cicero wrote so interestingly. It is said there is one sign which is pathognomonic and that is the sign of reminiscence—the time when a man delights to talk about the things that happened in the days of his youth. At the risk of being inducted into that ancient and honorable fraternity I am going back for a few moments to my college days.

Dr. J. Adams Allen, a man venerable in years and full of wisdom, was the dean of the college. "Uncle" we called him because of the paternal interest he took in all of his boys. Even to this day I can see those three fingers which he used to hold up before us and say and repeat day after day, "Boys, in the making of a diagnosis don't forget three things, the blood, the nerve, and the part diseased." It was a big lesson and slow of appreciation because it was so big. One day

there was considerable light thrown on it, however, when one of the students asked a question. He was apparently one of those gentlemen, of whom fortunately there are only a few nowadays and becoming fewer, who were more concerned about the drugs to be put into the medicine case than about the ideas that should be put into the cranial case. Anyway, he asked a question about a certain drug naming it, I don't remember what it was and it makes no difference because the principle is the same, whether that drug wasn't good for typhoid fever. "Uncle" stood silent for a moment looking up at the ceiling, stroking his patriarchal beard, a cloud of seriousness passing over his face, evidently puzzled over the density of the unreceptive gray matter in the seats before him, and then with a twinkle in his eye and a smile on his lips, half sarcastic and half friendly, said, "That depends on what is the matter." An astounding answer to us all because we thought the question carried in it the diagnosis, namely, typhoid fever, and wasn't that particular drug good for typhoid fever? "That depends on what is the matter," is all the answer we got from "Uncle," leaving us to think it over. Finally it dawned on us that perhaps after all just because it is said that a certain patient has typhoid fever does not tell what is the matter, or pneumonia does not tell all that is the matter; or if a patient comes into a doctor's office complaining of pain in the right lower quadrant of his abdomen and the doctor makes a snap diagnosis of chronic appendicitis, hustles him off to the hospital, and the next morning takes out a chronic appendix, ten chances to one that doctor is going to come to grief, because that patient will come back in three months and say, "Doctor, ever since my operation my pain is worse than ever." What happened? The doctor considered only the part and forgot the blood and the nerve, and therefore failed in his diagnosis and his treatment was worse than a failure. Therefore, "Uncle's" dictum, "Boys, in the making of a diagnosis don't forget three things, the blood, the nerve, and the part diseased."

To some of you it may occur that this paper rightfully belongs to the medical section. For this I make no apology, but simply express my conviction that a diagnosis is a diagnosis by whomsoever made, and that the surgeon must be a physician first, last and always, and never set himself apart from the great Æsculapian fraternity unless he prefers to be a lost sheep without a shepherd.

As a surgeon one reads with great pleasure about the triumphs of surgery. But let it not be

forgotten that these triumphs were made possible because of the firm foundation laid by the medical wing of our profession and on this foundation the surgical amphitheatre stands today.

Gentlemen, we have science enough for the present. Let us labor diligently to construct the data we have into usable forms and continue to cultivate the spirit of friendship, for friendship is what this distracted world needs today—friendships not battleships!

TUMORS OF BREAST*

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The United States mortality statistics for 1920 disclose that 72,931 deaths occurred from cancer, of which number 8.8 per cent or 6,437 were caused by cancer of the breast; ninety-three being in the breast of males.

This appears an appalling mortality for an affection which involves a definite limited area where a tumor formation should be early and readily recognizable, at least at that early period when removal might be undertaken with assurance of freedom from recurrence. This is a sad showing, especially as every one of these deaths with few exceptions, was needless, for it is generally recognized that every cancer is curable through removal, provided it involves an area where this is feasible and the same is undertaken during that period existing between its origin and before giving rise to metastases. As there are no areas involved by cancer where the opportunity for early recognition and ease of removal are comparable with the breast, it is here that our results should be ideal; but that they fall far short of this is shown by the fact that at the present time probably not over 40 to 50 per cent of the cases operated upon are cured; of Halstead's 210 cases eighty-nine or 42.4 per cent were cured. Walthers statistics from Paris hospitals give 52 per cent of cures after three years and Le Dentu's table 47.5 per cent well after four years. This implies that over one-half of the cases consulting us have already suffered metastases or that there has been a failure to completely remove all of the involved structure.

While this is a gloomy picture of our results yet it is such an improvement over what was portrayed seventy-five years ago that I can not forego the temptation of placing by the side of it, Velpeau's observation of that time while struggling

with others to establish extirpation as a justifiable procedure. He states: "As to the question whether extirpation is a remedy, which sound practice ought to allow us to make a trial of, I do not hesitate to answer in the affirmative. To Celsus, who forbids the cancer from being meddled with because it always returns; to Albucacis, who has never seen the operation followed by entire success; to Monroe, who says that out of more than sixty women he had observed after this operation, only four survived after two years. To Boyer, who out of more than a hundred cases could cite but a few cures, and McFarland, who out of one hundred cases had not seen an effectual cure, is opposed the better results of Hill, Bell, North, Schumacher, Depuytren, Roux and others which led him to state that nothing can be more dangerous than to shrink from its obliteration under idle pretexts, as in the majority of cases it is only a local process primarily.

That a large per cent of cases fail to seek professional advice and relief prior to inoperability is unquestioned. Of Halstead's 210 cases, 52.4 per cent had involvement of axillary and 71.4 per cent of combined axillary and cervical lymph nodes.

Wherein lies the fault of so large a per cent failing to submit to only tardy relief from their malady? Among the various possible reasons the following must stand out prominently:

1. The woman is unacquainted with the symptoms of cancer of the breast thus failing to seek professional advice. Even this being so, can we absolve ourselves from blame? Hardly, as our profession is the only one possessed of that knowledge and it becomes our duty, as I see it, to impart that information to her when occasion presents itself, as it often must, to the family physician. Every woman should know that a tumor (a lump) appearing in the breast after the age of thirty-five or forty years, or marked increase in size of a growth which may have developed at an earlier period, should give her such concern as to lead her to consult her physician as to its probable character. (Similarly should she be advised as to early symptoms of carcinoma of the uterus.)

2. The senescent woman may have a knowledge of the presence of a tumor in her breast and a suspicion of its character (if not positive knowledge as imparted to her by her physician) but she shrinks from operative interference through fear that it will be of no avail, for she has generally learned of one or more of that 50 per cent whose lives were not saved by such means. Unfortunately this knowledge of the facts cannot be overcome,

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except through improvement of our results, which in turn cannot take place until our services are sought earlier than is the case at the present time.

In few fields of our activity does failure have such a deterrent effect upon others as in that of cancer of the breast. The reason is easily understood when we recall that these patients live for months if not years during which time they can advertise the failure of surgery. While one would not counsel refusing surgical aid to anyone when the same holds out any benefit for recovery, yet to operate when the condition is hopeless is a deterrent to others. It is probably not an exaggeration to say that every patient failing a cure following an operation for cancer of the breast prevents one or more from seeking timely aid at our hands.

3. Some women are no doubt deterred from seeking operative relief either through fear of the magnitude of the operation, or a misconception of the function and importance of the mamma, views which it is feared are shared by some physicians not engaged in surgery.

Prior to senescence the mamma must be viewed as an area of integument which has some fifteen or twenty of its sudiparous glands so modified as to secrete milk under proper stimuli, while the mamma of the senescent woman can only be viewed as a useless area of integument harboring all the dangers of malignancy and the removal of which implies no loss of function or any danger greater than the removal of a similar area of integument elsewhere.

To the writer it has appeared that there exists a tendency to advise senescent women with growths in the breast to await the making of a positive diagnosis of cancer before advising operative interference. A tendency occasioned, no doubt, by the stress most writers lay upon the means of making a diagnosis. To me, this does not seem to be in the interest of the patient, for to withhold operative interference until a diagnosis can be positively made, based upon clinical symptoms (and these are the only ones we have to guide us) must often lead to the woman's life being jeopardized through local and systemic extension.

In our social structure we have a rule to the effect that all must be considered innocent until proven guilty. In dealing with tumors of the breast it has appeared to me that there exists a tendency to apply this rule, namely: to consider all tumors innocent until proved malignant. I would alter this rule so as to consider all tumors malignant until proven innocent, for the reason that so large a percent are malignant, and I would

have none escape punishment, i. e., removal. When in doubt, give the patient the benefit of the doubt, which in this instance means removal of the tumor and generally the breast.

By some it will be urged that such a procedure must often lead to the unnecessary removal of the breast through error in diagnosis, the tumor being benign. It is granted that this would be true, yet if all tumors of the breast were considered malignant and treated accordingly, it could only lead to fifteen out of every hundred having the breast needlessly removed, for approximately eighty-five out of one hundred breast tumors are malignant. Would the needless sacrifice of fifteen breasts, now consisting of a useless piece of integument serving no other purpose, than an esthetic one, be a large price to pay for assurance against death from malignancy of the part of those whose breast harbored only benign growths at the time of operation? However, of these 15 per cent of innocent tumors the larger number may readily be recognized as such; the rest will remain upon the border line.

Our classification of tumors of the breast is, of course, based upon the histopathology. While this classification is highly useful in furthering our knowledge of their course and treatment, yet it is not one which can be used in our preoperative study of the cases, for it is impossible in all instances to differentiate the varieties by their physical appearance and clinical history. As microscopic aids to diagnosis can only be employed after sections have been made of the removed structure, either at the time of the operation or subsequent thereto, and in order that the deductions made from such examinations may be reliable, that is, malignancy excluded, the tumor must be sectioned and examined in all its areas; hence the microscope as a preoperative aid to diagnosis loses much if not all of its value.

We are therefore forced to make a tentative diagnosis based upon the physical appearance and clinical history of the growth, and how unreliable these at times may be, was forced upon my attention by an experience years ago.

In 1887, I was requested by a colleague to assist in the removal of a growth about the size of a hen's egg which was diagnosed as a fibro-adenomata of the breast of C. L., spinster aged thirty-seven. The growth had existed for some eight or nine years, having within the preceding year increased from the size of a walnut to that mentioned. It was freely movable and easily enucleated. Microscopic examination confirmed the diagnosis and failed to reveal any malignancy. In nine months there was a recurrence locally which I was requested by the doctor to remove. I removed the whole breast. Microscopic

findings: carcinoma. Within eleven months, there was again a recurrence locally, at the median side of the scar, same represented by two small nodules about the size of a small hazel nut and pea; the larger lying over four interspace right side, the lesser over fourth rib. Upon exposing the larger mass, it was found to dip well into the structures of the intercostal muscles, about two inches of the fourth and fifth ribs were removed, as well as intercostal muscle for an inch to each side of area leaving the pleura exposed and intact. A graft of skin was brought up from below to cover wound. The patient died six years ago at the age of sixty-six.

In proceeding to establish the innocence of a given mass or an enlargement in the breast, we are aided largely by a knowledge of the patient's age, thus, if under thirty-five, malignancy is practically excluded except for sarcoma. Inflammatory processes of the breast, while characterized by a swelling which at times may simulate a tumor mass, can but rarely if ever, offer difficulty in recognition of its true character, if acute. While the rare involvement of the breast with tuberculosis, and still more rarely with actinomycosis or echinococcus cysts may at some period of its existence present points of resemblance yet it must be rare that a differentiation cannot be readily made.

Similarly the rare condition of hypertrophy can offer no obstacle to ready recognition, through the rapid, generally diffuse enlargement of the gland, bilateral, appearing as a rule at puberty or soon after. The breast lacking that density, indicative of a local or general neoplasm. Retro-mammary lipoma may possibly simulate the same.

Of benign tumors of the gland, some writers state that there is only one namely: fibro-adenomata (Killiana p. 112—Eisendrath 227) To the writer this simple conception of benign tumors of the breast appears to have advantage from a clinical standpoint over the more accurate classification which may be based upon the histopathology of such tumors tending to such classification as fibroma, adenoma, adenofibroma, depending whether the tumor contains purely fibrous or adenomatous tissue, which they rarely do, or whether the fibrous or adenomatous tissue predominate, when both participate in the process as they usually do.

The fact that these tumors usually make their appearance in the pre-cancerous age, prior to thirty, generally between twenty and thirty, are possessed of a limited outline as they grow expansively and are encapsulated, freely movable, generally painless, often of very slow growth, if

not stationary, should readily establish their benign character.

There exists one form of fibroadenoma namely: papillary intracystic fibroadenoma, or fibroadenoma intracanalicular or cystadenoma which presents much more difficulty in adjudging innocent for the reason that it appears usually after the menopause (average age of fifty years) and the further fact that malignant forms are relatively frequent, whether in consequence of malignancy from the beginning or transformation of benign into a malignant growth is not easy to say. Like the massive or solid adenofibromata, it is characterized by being usually a single, globular, freely movable mass of slow growth and often accompanied by a serous or bloody discharge from the nipple.

The typical cystadenoma consists of papillary out-growth into the larger ducts from one or more sites upon that wall.

Unless giving evidence of benignity, through cessation of growth, free mobility and absence of bloody discharge, it should be treated as if it were malignant, for the only factor lacking malignancy in the benign form of these growths is that vigor of cell growth making it possible for them to break through the barrier presented by the basement membrane of the duct and thus invading the periductal tissue.

If in the course of such removal it is found that the tumor mass is well encapsulated, removal of the tumor alone will, no doubt, suffice in many cases.

Aside from fibro-adenomata, the breast may be the seat of mixed tumors which represent the teratomata derived from the isolation of cells already in an advanced stage of differentiation, whose capabilities are therefore limited and somewhat strictly determined by that fact. They are made up of stratified epithelium together with various types of connective tissue well advanced in differentiation as cartilage and bone. While these growths are, as a rule, benign, if their structures are well advanced toward differentiation, such as are highly cellular and of embryonal type, tend undoubtedly toward malignancy. There is no way in which these tumors can be differentiated from fibroadenomata or the highly differentiated from the poorly differentiated types. If they appear prior to the fourth decade and are growing slowly, if at all, they may be considered as innocent and left alone, or submitted to careful and thorough enucleation, otherwise they must remain under the ban of suspicion.

Aside from the foregoing there still remains to be considered a condition, namely: cystic mas-

titis, which cannot be looked upon as a tumor process but rather the result of involutional changes incident to senile atrophy. The condition comes on with the inauguration of the menopause or later, consisting of a senile hyperplasia represented by the formation of rather dense fibrous tissue throughout the gland with hypertrophy of the acinous tissue into adenomatous structure often with the formation of cysts. It is not thought to be due to infections or trauma, the scarring being a normal process incident to the senile involution of the breast, but the formation of adenomatous cysts and papillomatous growths must be considered abnormal.

In the foregoing I have not differentiated the chronic interstitial from the chronic glandular types. The condition generally first develops in one breast and often at a later period in the other. The onset is slow and devoid of pain, being unrecognized until a cyst of some size attracts attention. There may be serous or bloody discharge from the nipple, the latter indicating a papillomatous cystoma with its attendant danger of cancer. On palpation the whole organ is firm, of normal or reduced size, with many hard movable nodules the size of a pea or larger, scattered throughout, there is no adherence to muscle or skin, though the nipple may be somewhat retracted.

That this condition in its inception is benign, can hardly be subject to question, yet how far it predisposes to malignancy is a mooted question. Delbert, representing a large body of surgical opinion, states that the affection is too benign to justify extirpation and recommends pressure, iodide of potash, and injections of carbolyzed glycerine into the cysts. I fail to recognize any justification for any interference unless it be the administration of iodide of potash under the supposition that it will promote degeneration and absorption of the proliferated cells or serve as a placebo while the patient is under observation, for such glands are no source of disturbance either through pain, inconvenience from size, or loss of function as the gland has none. Dr. Bloodgood, at the last meeting of the American Medical Association in a consideration of the benignity of these chronic breast changes, stated that of 329 cases of chronic mastitis of the breast, two had died of cancer. This, to me, is most remarkable, as from this it would appear that chronic mastitis conferred upon the breast an immunity against cancer, for assuming that one out of twelve women past thirty-five (in England one out of eight) die of cancer, and approximately 10 per cent of these die of cancer of the breast, this

would imply that twenty-seven of the above should, under normal conditions have died of cancer and three of cancer of the breast, one per cent of all women past forty, die of cancer of the breast.

In opposition to this view of benignity is that of Schimmelbusch, Sourcie, Brodie and Saar, that such breast changes carry neoplastic qualities from which it is only a short step to carcinoma.

Spee, from an examination of 295 cases found 15 per cent showing carcinomatous changes. Ewing's material shows precancerous changes or immature carcinomata in nearly 50 per cent of the breasts excised for cystic disease.

It having been determined in so far as this is possible, that a growth in the breast is benign, what should be our management of the same?

As they cannot disturb function or but rarely be of such a size as to be an impediment they may unquestionably be left undisturbed with caution to the woman that should increased growth take place at any time but especially after the age of thirty-five or forty, that no time should be lost in seeking professional advice. However, if it is desirable to remove the growth in order to allay the patient's fears or as a prophylaxis against malignancy there can be no objection provided that the growth be completely removed including all of the capsule. Such growths should be carefully sectioned throughout all of its parts with a view of positively establishing the absence or presence of malignancy; and if malignancy is shown to be present the whole breast should at once be removed, if it is shown that the growth has at any point invaded or passed the barrier presented by the capsule. If in the course of the operation there are found microscopic evidence of such invasion of the capsule or the passing of this barrier then in my opinion the whole breast should be removed at the time.

There will always remain a small per cent of tumors on the border line between benignancy and malignancy which it will be impossible by our present methods of diagnosis to definitely assign to the benign group. In such instances I would have the patient receive the benefit of the doubt which would be to consider it malignant and treated accordingly. (I have so far said nothing of the microscope as an aid to diagnosis at the time of operation through examination of sections removed from the growth at the time. Personally I have discarded the procedure. First because I did not while employing it, always get to the microscopist a section of that part of the tumor in which malignancy was existent, as

shown by later thorough sectioning of the growth. I have come to rely entirely upon the clinical history and physical characteristics of the growth, corrected by a further inspection of the growth and its surrounding tissue and after removal the gross characteristics presented upon section and where in doubt removing the breast.) In my practice this has led to an occasional sacrifice of a breast to the element of safety but of my many professional errors I think this has been the least. Such errors I think have been compensated by lives that have been saved which would otherwise have been lost.

The management of the cancerous breast at the present time can only imply its complete removal with that of the axillary lymph nodes and pectoral muscles where there exists suspicion that it or its sheath has become involved. When Moore, in 1867 contended that recurrences were not due so much to blood infection as incomplete extirpation of the tumor, he laid the foundation for the modern operation for cancer of the breast. He recommended a complete removal of the breast, skin, fat and axillary lymph nodes and pectoral muscle. Today we can add nothing to this except whatever benefits that radium or x-ray may afford. (Banks, in England, and the younger Gross and Halstead and many other surgeons of this and other countries have adduced convincing statistics in support of that view. Upon the thoroughness with which this advice is followed will depend much of our success.) That improvement in results has followed this plan is shown by De Page's report of cases well after three years in different periods. From 1865 to 1875—9.4 per cent; 1875 to 1885—10 per cent; 1885 to 1895—33.8 per cent; 1895 to 1905—46.5 per cent.

That this latter highly favorable result, at least when compared with earlier periods, has been entirely due to an improved technic is probably not correct, for an earlier recognition of cancer and an inclusion in the number operated upon of some that are just in their inception is in part accountable for the result.

That we may hope for such improvement in the surgical technic as shall much further reduce the mortality seems improbable. Therefore, our future hope must lie in the direction of its prevention or earlier recognition.

As to prevention, so far we have none recognized unless it be the ablation of the functionless integument, thus relieving nature of the task which she strives to accomplish and in doing so often loses her control over the growth power of the tissues. While the subject is possibly beyond the realm of present day consideration I am how-

ever of the opinion that the period will arrive when we will seriously consider the removal of all useless structure when they harbour such elements of danger as does the senescent breast and thus anticipate nature in her desired effort. In the meantime, we must rely upon seeing these cases earlier and viewing all growths as malignant and treating them accordingly which do not furnish every evidence of benignity.

Discussion

Dr. William L. Allen, Davenport—It is always a great pleasure to hear Dr. Jepson read a paper, for he goes right to the bottom of the difficulty, and moreover he is usually extremely logical and very radical. It seems to me that this time he is more radical than most of the writers who have recently brought this matter before us. However, that part of it is not so important and I do not disagree with him on that point. But I do think he is too pessimistic. His advice to operate on all these cases early is perfectly justified, but he says they do not come to us. Nearly all authorities show that they come to you very much more numerous than they used to come. Whether they are not so alarmed about their trouble or have more confidence in the results of treatment, I do not know. I do not agree with Dr. Bloodgood when he states in a recent article that out of 267 cases of women coming to him for breast troubles including tumors he turned away 100 without even offering to operate. That statement was a shock to me, and I am sure Dr. Jepson would think that was too extreme. But on reading his article a little further you will find the reason for that and will agree with him entirely, for on the next page he says that out of 3,000 cases of single tumor of one breast he found only five that were not cancerous. In that way two opposite views are reconciled. If you look at the text of Dr. Bloodgood's paper you will think that all Dr. Jepson tells you in his paper is very pessimistic; look beyond the text of that paper and you will see that he agrees with him precisely as to the end results. But it seems to me we ought to get surgical standardization of these things in a simple manner. There are five or six diagnostic methods that can be used by all of us without the laboratory tests. The only thing the Doctor omitted in that line was the great importance of palpation of these conditions. By palpation alone you can do more than with anything else in making a diagnosis. In these cases an indefinite tumor, a tumor that appears at one time and not at another, is usually not cancerous. A tumor that is multiple is usually not cancerous. Tumors that are in both breasts are usually not cancerous, but a single tumor in one breast during the cancerous age comes in the category of those the Doctor advises you to operate. The reason Dr. Jepson is pessimistic is that twenty-five years ago 90 per cent of cases that came to you were cancerous, whereas today less than 50 per cent are cancerous. This is due to the fact that now people consult the

doctor early as to any condition in which a tumor is suspected. If your patient has a single tumor in the breast it seems to me you should be as radical as Dr. Jepson says and operate, and operate radically.

Dr. Edward P. Davis, Philadelphia—To understand diseased conditions of the breast we must refer to its relation with the general development of the individual. It is well known that in women there is a distinct relation between the development and functions of the thyroid and the mammary glands. This may often be utilized in parturient patients where lactation is deficient, by supplying thyroid extract to these patients. Malignant growth of the breast begins in the epithelium of the acini, and this development is considerably influenced by the ductless glands. Whatever interferes with the development of the individual at puberty must interfere with the growth of healthy epithelia in the breasts, and thus a possible source for the origin of malignant disease later may develop. The hygiene of women in early life is important to secure under medical supervision the development of all portions of the body including the breasts. It has been proposed in this country to institute a proceeding which has been of value in other countries—namely, that there shall be posted, in rooms frequented only by women, a plain description of the early symptoms of cancer in women, thus giving information upon this important subject. If by this or similar means, women could be brought to report to physicians at the first sign of abnormality in those organs most often affected by cancer, a better chance for recovery after operation or treatment would be afforded. Pregnancy enormously increases the growth and malignancy of cancer attacking the breasts. Hence so soon as a pregnant woman shows signs or symptoms of this complication, her case should be investigated as thoroughly as possible; if necessary, operation should be promptly performed. Healthy lactation does not encourage development of cancer, but unquestionably chronic irritation of the breasts is a factor in such development. There is a considerable class of women who sometimes worry the surgeon, the obstetrician and the gynecologist about the condition of the breasts. These individuals are often unnatural in development or in the lack of development and function, and have chronic irritation about the breasts. There is hardening in both, and this has been detected by the patient, and she fears that it is cancer. Some friends or relatives may have died from malignant disease which increases the woman's fear. Undoubtedly cancer is more frequent than a generation ago, and this increased frequency explains itself the apparent hereditary tendency. Where there is a considerable family and relationship, cancer is so frequent, that it is not strange that one member of this family and relationship should be affected by this disease. Such is the only knowledge we have concerning heredity in cancer. When patients who fear this disease consult a physician, they should be minutely and very thoroughly examined. Foci of in-

fection like the teeth, tonsils, appendix or other, should be found and if present, properly treated. Where no distinct tumor can be made out in the breast, the patient should be kept under observation, and should receive general treatment adapted to the improvement of her general condition. In some cases the x-ray will diminish the sensitiveness in hardened tissue in the breasts. In the present stage of our knowledge radium should be avoided, lest it stimulate the growth of connective tissue. Thyroid extract is useful in many patients, and if the general health can be improved, the local condition may become better and the patient's fears naturally subside. Occasionally we find cases where in spite of such treatment, a distinct thickening in the tissues of the breasts remains, which causes the patient great fear and mental depression. It may be best to remove both breasts in such a case, thereby putting an end to the patient's fears and depression, and sparing her from the possible danger of the development of malignant disease. If this be done, some cases may be operated upon unnecessarily, but less harm will be done in that way than by neglecting a case in which cancer afterward develops. If the patient is anxious and willing to have the operation done, and knows that there will be scars after the operation, it may be best to perform it. The subject of the paper is of great clinical importance to those who deal with women, and the view taken by the writer, I believe, is thoroughly sound.

Dr. Paul A. White, Davenport—Nothing has been said of adjunct measures increasing the good results obtained by surgery. I do not think the subject should be closed without mentioning especially those points which have been emphasized by such men as Erksine of Cedar Rapids, Case of Battle Creek, and Bowing of Rochester, namely: The pre-operative radiation of the area of the affected breast, and post-operative raying not only of the involved breast, but of the opposite breast, the scapular regions, axillary regions, the anterior and posterior cervical regions, then the use of radium over recurrent nodules. Since these patients do not come to us early and we have no way of getting them into our hands before they choose to come, it seems to me opportunity should not pass to stress the use of these adjunct measures which will undoubtedly raise the percentage of five-year cures in a great many of these breast cases.

Dr. Jepson—I want to thank Dr. Allen and Dr. White for their kind discussion of this paper, and more especially Dr. Davis for his elucidation of the physiological functions of the breasts as well as for his statements bearing on the pathology of carcinoma. While I much question whether my paper of itself was of any value to the society, I am quite sure that Dr. Davis' discussion was, and in fact it was the most important of all. Dr. Davis, will you allow me to extend to you, on behalf of the Society, our thanks for participating in this discussion as kindly and helpfully as you did?

SURGERY OF THE THYROID GLAND*

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Surgery, x-ray, and radium, in conjunction with rest and palliative medication are the only measures in goiter treatment that have survived the test of time. The title here suggests bias in the consideration of these forms of treatment but search has been made for definite evidence regarding the results of x-ray and radium treatment in this condition.

Statistics concerning the results of surgical treatment have accumulated from years of experience in dealing with large numbers of goiter patients and have been collected a sufficient time after the treatment was instituted to give them a definite value.

Many of the reports concerning x-ray and radium treatment carry an air of extravagance and are based on limited experience with a few cases presented before time enough has elapsed to judge of final results. Hoag's³ criticism is that much of the x-ray treatment of goiter has been "carried on in a perfunctory way without proper choice of cases and without a knowledge of the general principles essential to intelligent choice of therapeutic measures, and that too many who have had little experience in even general therapy are giving treatment for this malady." Some valuable work along this line has been done, however.

The classifications of types of goiters has become pretty well settled in recent years and those appearing in the current literature are quite uniform. Patients continue to be seen, however, who have received treatment sometimes carried on for months or even years that is unjustifiable considering the type of goiter they possessed. Complicated classifications have added to the confusion.

Sistrunk¹⁰ quoting Plummer's conceptions following years of experience with many thousands of goiter patients divides all goiters into three types, colloid, adenomatous, and exophthalmic. All others are found as variations or combinations of these three. With this simple classification problems of diagnosis and treatment resolve themselves more easily along rational lines.

The colloid goiter is found in young people and probably never occurs in persons over thirty or thirty-five.¹⁰ It is very common during adolescence especially in girls, often appearing at or following puberty and usually disappearing be-

fore twenty-five years of age. Adenomata may occur in this type of goiter or the coexistence of nervousness and tachycardia not uncommon at this age may confuse it with exophthalmic goiter. The basal metabolism will be found normal, however, and the adenomata will be rendered more prominent and more easily diagnosed following the normal involution of the gland in later adolescence, or when reduced by the administration of iodine or thyroid preparations. Adenomata seldom if ever produce toxic symptoms before thirty so their presence should not be taken to explain nervous or cardiac symptoms that may be present.

The colloid goiter is symmetrically enlarged, has a soft granular feel, and microscopically shows dilated acini filled with colloid material, lined with flattened epithelium.

Adenomatous goiters appear most commonly in middle life. Encapsulated tumors grow in the substance of the thyroid gland and are believed to be derived from foetal cell rests. These sometimes present themselves during adolescence but may not attain prominence until the colloid material in the gland subsides. This enlargement is irregular and nodular, the consistency of the nodules depending on the degenerative process present. The fibrous and calcareous types will feel hard or even stony, while the colloid, cystic or hemorrhagic types will be more soft. Microscopically practically normal thyroid tissue is found with the adenomata encapsulated. The acini of the adenomata may be of foetal type or may resemble adult thyroid acini and may contain large amounts of colloid material. In toxic adenomata there is no evidence of hyperplasia or hypertrophy in the epithelium of the acini of the gland substance or the adenomata to suggest a cause for the hyperthyroidism. The toxicity is by some believed to be due to degenerative products from the adenomata.

The symptoms of toxic adenomata appear on an average of sixteen years following the appearance of the tumors at an average age of forty-three.⁷ This toxicity is initiated as a mild but gradually increasing condition in contrast to the rapid progress and sudden exacerbations of exophthalmic goiter. It has a selective action on the heart and blood-vessels which bear the brunt of years of mild hyperthyroidism, giving the characteristic symptoms of irregular pulse, attacks of tachycardia, hypertension and later with myocardial degeneration, dyspnea and edema. Tremor, moist and flushed skin and loss of weight and strength are present. Exophthalmos is absent. The metabolic rate is increased but does not attain the heights of exophthalmic goiter.

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Exophthalmic goiter occurs at any age. Some patients have been seen under ten years of age and a few at nearly sixty. Nearly all appear between the ages of twenty and forty, or at an average age of about thirty-six. Symptoms as tachycardia, flushed moist skin, tremor, loss of weight and strength usually appear early and progress rapidly in severity. The nervous system is profoundly affected. Exophthalmos develops in the first few months in 50 per cent and during the first two years in over 90 per cent of the patients. The pulse is rapid but regular until myocardial degeneration occurs late in the disease. The metabolic rate is increased. After a variable period of severe toxicity, if the patient survives, there comes a marked amelioration of symptoms with improvement in the patient's general condition. Appreciation of this fact explains the multitude of medicinal and other therapeutic measures that have attained a reputation in the treatment of this condition. Some cases pursue a chronic course without a definitely discernable crisis.

Unless radical measures are instituted, sooner or later the exacerbation is usually repeated, each time with distinct danger to life, and with consequential marked degenerative changes in neuromuscular, cardio-vascular, and other vital systems.

The exophthalmic goiter is symmetrically enlarged, feels quite hard, and microscopically the epithelium lining the acini is hypertrophied but there is very little colloid material present.

Simple colloid goiter is not a surgical condition, nor should x-ray or radium treatment be given. Any other form of therapy is futile except iodine or thyroid administration. Marine and Kimball⁸ have shown that colloid goiter and stimulation to growth of latent adenomata may be prevented by iodine medication between the ages of eleven and seventeen. Decrease in size is produced by this means in two-thirds of the subjects after colloid goiter has developed.

Adenomatous goiter is a surgical condition if treatment is indicated. Considering that there is no demonstrable hyperplasia or epithelial hypertrophy in the acini of the gland or its contained adenomata, and that toxicity may be due to degenerative products from the adenomata, there seems to be no rational basis for x-ray or radium treatment or any other type of therapy than surgery in this condition. Patients are seen, however, who have had iodine or thyroid medication, even injection of boiling water or other substances into the gland, and some who have re-

ceived x-ray or radium treatments when careful selective diagnosis has not been made.

Unless producing pressure or obstructive symptoms adenomatous goiters had best not be removed during adolescence. They do not produce toxic symptoms in this period, the thyroid gland is very essential during the period of growth, and undeveloped adenomata will likely be left behind which will reproduce the deformity and likelihood of toxicity in later life if operated on at this time. If observed after the age of twenty-five or thirty, because of the danger of subsequent toxicity they had best be removed. If toxic symptoms are present thyroidectomy is indicated unless degenerative cardiovascular changes make imperative a period of rest with digitalis administration as a preliminary measure.

Following operation on toxic adenomata the metabolic rate usually drops promptly to normal and unless considerable organic degeneration has taken place, the general condition becomes normal. Judd⁶ shows 83 per cent of patients free from all signs of the disease, another 5 per cent markedly improved, 9 per cent dead from all causes, and only 2 per cent not improved two years after operation in this type of goiter.

Exophthalmic goiter presents a more complicated problem. Two big factors enter here that are not present in colloid or adenomatous goiter, and they are not always fully appreciated or evaluated by the physician into whose hands the patient first falls. First; the rapid, often explosive development of the disease which carries a distinct menace to the patient's life and entails rapid degenerative changes in vital organs. Second; the natural course of the disease with its often violent exacerbations and periods intervening of comparative quiescence, each crisis hastening the patient toward dissolution or a state of chronic invalidism. The difficulty in appreciating this factor lies in the variability of the time element in the duration of an exacerbation or an intervening period, the former extending for a matter of weeks or months, while several years may elapse between exacerbations.

The first factor places a grave responsibility on the physician initiating treatment in exophthalmic goiter. Those who feel a security in using palliative measures early in this condition because of the mortality element in surgery should be impressed that the operative risk and results obtained are proportionate to the degenerative changes that have taken place, and that the higher mortality and incomplete results in late cases are not chargeable to surgery but to the method of treatment that allowed the patient to attain subse-

quent exacerbations with consequent visceral damage.

The second factor indicates the difficulty in interpreting results of therapeutic measures and should be carefully considered in placing valuation on statistical evidence especially where but a few cases have been reported, and but a short time has elapsed since the treatment was given.

Surgical statistics are often quoted from a report by Judd and Pemberton⁶ made in 1916 concerning a group of patients operated in 1909 showing 45 per cent cured and 15 per cent more markedly improved, or over 60 per cent excellent results. In 1920 Judd made a similar report on a group of 100 patients operated during 1914. This shows over 64 per cent cured and another 13 per cent markedly improved making nearly 80 per cent excellent results. Three factors in his report show the modesty of his statistics. (1) Seventeen per cent of the patients died from all causes during the six years and doubtless a number of them could have been classed with those showing excellent results. (2) None of the patients were included among those cured, though they reported themselves entirely well, if their replies showed the presence of any of the symptoms of hyperthyroidism, as increased pulse rate, tachycardia, or even nervousness. (3) Metabolism estimations were not made in 1914 on this group but sixty-four of the patients had preliminary ligations and only thirty-six were primary thyroidectomies showing that the majority of the group were late or severe cases. More and more thyroid tissue has been removed at this clinic during recent years and a similar group reported for 1919 may show further improvement in results.

Means and Aub⁹ report a group of fifty-five cases some treated by x-ray and some by surgery and make the statement there that the chance of cure is equally good by either method in groups of equal toxicity. Their work was carefully done and merits careful consideration. Means has said since, that he would go no farther than to say that x-ray seemed to improve the condition more than could be accounted for from rest or by spontaneous recovery, stating that in many cases it does no good, while others are improved by it.

Holmes⁴ recently has reviewed the x-ray treatment of exophthalmic goiters at the Massachusetts General Hospital but gives no definite data as to the percentage of cures. He recommends surgery if the condition has not yielded after the fourth or fifth treatment which is usually in about the sixth month after starting treatment. He cautions against prolonging it beyond this

point because of the added difficulties to surgery from the dense adhesions formed. This in spite of contentions to the contrary is a very material matter. The dangers of myxedema from heavy or prolonged dosage are pointed out and cases are cited where myxedema has occurred more than two years after treatment from the continued contraction of connective tissue.

Radium therapists cite the advantages of radium over x-ray as being exact dosage, greater penetration, and no noisy apparatus.¹ Equally good results it seems should be obtained by this method as with x-ray.

Goetsch² gives x-ray a place in treatment of mild cases and in preparation of severe cases for surgery, but cautions that valuable time may be lost with great increase in the surgical risk and damage to the patient. Jones⁵ expresses similar opinions and states that a more perfect x-ray dosage must be developed, and that diagnosis and estimation of benefit to patients of the treatment must be controlled by basal metabolism tests.

X-ray and radium treatment of exophthalmic goiter seems on the verge of a period of widespread exploitation and unless the work is carefully controlled along the lines laid down by the more careful workers a great deal of harm will be done to this group of patients.

Thyroidectomy should be deferred during the rising tide of a severe exacerbation. If there is doubt as to the tolerance of the patient to thyroidectomy a preliminary superior polar ligation will furnish a test in the reaction that follows this simple procedure as to the patient's ability to withstand an operation. If it is then judged that thyroidectomy will not be tolerated a second ligation will modify the crisis and the patient may be operated three or four months later in a greatly improved condition.

In a thyroidectomy for exophthalmic goiter all but the posterior capsule of one lobe, the isthmus, and part of the other lobe should be removed. One-sixth of a normal lobe will maintain thyroid function. Myxedema following thyroidectomy is a rare condition.

CONCLUSIONS

1. There are only three types of goiters that need to be kept in mind. Colloid, adenomatous and exophthalmic goiter.

2. Colloid goiters are not surgical and should not receive x-ray or radium treatment. They may be prevented by iodine administration and three-fourths of them will be reduced by iodine administration or thyroid products.

3. Adenomatous goiter is a surgical condition but should not be operated before growth is attained by the individual because these goiters do not become toxic during adolescence, the thyroid gland is greatly needed at this time, and immature adenomata may be left which will later develop. After growth is attained they may be operated whether toxic or not because of the danger of subsequent toxicity.

4. A rising tide of controversy over the treatment of exophthalmic goiter is apparent. X-ray and radium users are in many cases making premature and extravagant claims but some of the work being done with these agents merits the most careful consideration. It is not known that a large enough number of patients will escape subsequent exacerbations and consequent visceral damage to offset the known defects in this method of treatment.

5. Following surgical treatment of exophthalmic goiter including late and severe cases over 64 per cent of the patients are free from all evidences of hyperthyroidism, and 13 per cent more are very markedly improved, making approximately 80 per cent of excellent results after six years.

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Discussion

Dr. George Kessel, Cresco—The paper is a very excellent one, and I think has fairly stated the status of thyroid surgery as it exists today. The only thing I can add is to bring out my own troubles with this subject in our clinic. In a fully developed case we have of course a very clear picture. We know exactly what we have. But the question always is,

what ought to be done. Surgery has produced wonderful results, and I think the question that still stands is how these results come about, what it is that produces the good results. These things we do not yet know. Perhaps some of you were at Iowa City and heard the excellent paper by Professor Hanson of Chicago in which he raised very serious questions which have not been answered. For instance, when we cut out a portion of the gland, reducing its size, what are the results and why do we get them? Is it because we simply reduce a certain amount of hypertrophied tissue, or is it that we have removed part of the blood supply? For instance, the taking out of one kidney does not mean that only half as much urine will be secreted; or if you could implant two additional kidneys in a patient, this does not mean the production of twice as much urine. So in thyroid disease we do not know whether the condition is due to an increase in the size of the gland or to disordered nerve supply. Therefore we are in that position today where we can hardly say what the process is. We know that in the beginning of all sciences a mass of phenomena is piled up, phenomena incoordinated and unrelated, and it takes a long time to systematize them. The phenomena of nature are infinite in number and in variety, but the laws producing them are few. For instance, the discovery of the law of gravity made natural philosophy a science; the discovery of the atomic theory made chemistry a science because the phenomena could be arranged according to their affinity in nature. So the phenomena in relation to the thyroid gland are infinite in number and variety, but the forces producing them are few and can be classified according to their affinity. This is where we are today in the discussion of the thyroid problem—we still have no particular system. As an example, consider the heart problem involved in these cases. How are we going to diagnose a failing heart, a most important question. In listening to the heart we may detect altered rhythm or adventitious sounds and know that there is a heart disturbance, but we cannot make a prognosis on these symptoms. Our prognosis must be based on an entirely different set of symptoms produced by a different set of organs. Heart failure may be defined as inability of the heart to deliver sufficient blood to the organs of the body to enable them to function efficiently. Therefore we must look to the condition of the different organs for a prognosis and on these decide whether the heart is failing. The question of goiter is to my mind very puzzling and I hardly know where we are. I think we must co-ordinate and arrange the symptoms and signs we now have into a science and use them. Today we are hunting for new signs and symptoms to add to the large incoordinated mass we already have, in that way beclouding the path of progress by a fog of detail. Instead of this we should seek to arrange the facts we now have into usable form.

Dr. John F. Herrick, Ottumwa—This is one of the most important subjects we have for considera-

tion today. In giving the conclusions that are generally accepted at this time, the essayist has covered every point so satisfactorily that there is very little left to discuss unless it be the exophthalmic variety of goiter. It would seem that possibly the nervous system is responsible for hyperthyroidism in a number of cases, because it has been observed that some severe nervous shock has produced exophthalmic goiter, which is often more than just a simple increase of the thyroid secretion. It may be accompanied by a nervous condition that is very annoying, but so far we have no means of determining the presence or absence of exophthalmic goiter except by noting the basal metabolic rate. If an individual with symptoms of exophthalmic goiter has a high metabolic rate the diagnosis is considered conclusive. If he has a low metabolic rate the symptoms must be attributed to another cause. The chief symptoms of exophthalmic goiter can be produced by the administration of thyroid or thyroxin, in that way you can demonstrate the influence of increased thyroid secretion. As to the treatment. The statistics Dr. White has presented relative to the results of surgery in these cases, are those which are generally accepted by the profession. Data bearing on the use of x-ray and radium, something new in the treatment of these cases, were well put by the essayist, and the warning that they should be used with extreme caution was timely. In the next few years there is going to be a great deal of injury and damage done by the x-ray and radium, just as there has been with every method of radical treatment that has been introduced, whether in medicine or surgery. Therefore I feel that we should be very careful and go slowly in the use of these agents. Nevertheless I am a firm believer in their value. There is no question but the use of the x-ray, when properly controlled by the basal metabolism, will reduce the metabolic rate from fifty, sixty or seventy, down to normal or practically normal. I would say that a person using either radium or x-ray should not go below normal.

Dr. White—It is true that there are a great many considerations that arise in exophthalmic goiter. Dr. Kessel very cautiously approached the subject, and there are a great many considerations that confuse the picture. A simple classification helps wonderfully when the patient comes into the office because of the variable symptoms that this disease, and especially exophthalmic goiter, presents. With that classification there no longer remains excuse for promiscuous and oftentimes useless treatment of toxic adenoma and colloid goiter. Whatever the considerations as to etiology may be, whether sympathetic influence or other condition is the cause of exophthalmic goiter, there is clear pathology in the goiter itself, showing that removal of tissue will be effective. Dr. Herrick has very well pointed out that judgment with reference to x-ray and radium treatment must be held in abeyance, but I think most workers along this line feel that precaution in the use of these agents must be exercised. The litera-

ture is full of matter pertaining to the treatment of exophthalmic goiter, a good deal of which is confusing, and one is not always able to understand just what is meant by a certain classification. One author, using radium I believe, points out that he divides the cases into three types; one type amenable to treatment being colloid, the other two types being hyperplastic goiter and exophthalmic goiter. This classification plunges the subject into confusion and negatives the discussion of radium treatment. Many men, after treating twenty-five or thirty cases, rush into the literature with their reports, when we know from the natural course of the disease that for three or four years after an exacerbation there may be a remission in the disease, when, due to emotional stress or other strain affecting the metabolic system there will be another period of exacerbation. It is contended that exacerbations recur after surgery. However, we know about the percentage of cases that do recur following removal of tissue, but we do not know the number that will recur after radium or x-ray treatment. The case should be properly diagnosed and selected and the subject approached with a very thorough appreciation of this natural course of the disease, and not credit the therapeutic agent with the result when it is a spontaneous recovery.

SOME OBSTETRICAL PROBLEMS INVOLVED IN STILL-BIRTHS AND DEATHS OF NEW-BORN INFANTS*

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A still birth is understood to be a birth of a dead child that has reached in its intrauterine life the period of viability, that is, at least twenty-eight weeks. A birth is the separation of the entire body of the child from the mother. It is dead or still-born if it shows no sign of life after it is completely separated from the mother. It is a living child if it shows any signs of life such as respiratory or other movements or if the heart beats, however irregularly or feebly. It is not necessary that the child should make respiratory movements to be pronounced alive. Such a birth should be reported to the department of vital statistics as a living child even if it dies shortly after birth without breathing and a regular death certificate should be made out. If the child makes respiratory or other movements after the head or other part of the body but not the whole body is born and then if all evidence of life ceases before the separation from the mother is complete it is still-born and should be so reported.

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Many physicians report as still-born all children who do not breathe although the heart still beats at birth or who make only a few gasping movements when stimulated by artificial respiration. Some even report as still-births all who die within an hour or two after birth. This is improper and contrary to law and vitiates statistics.

This definition of still-birth which introduces the notion of viability is not in conformity with that given by the American registration officials. In the rules adopted by the U. S. Bureau of the census and all state boards of vital statistics in the birth registration area of the U. S. the idea of viability is distinctly repudiated. Any child, no matter at what stage of intrauterine life it has reached at birth is considered a living child if it shows any sign of life after birth and as a still-born if it is dead. Writers class all births before twenty-eight weeks or before the child is 35 cm. long as abortions or miscarriages and most physicians think it is not necessary to report these births at all. This position seems to us reasonable but the statisticians no doubt have also good reasons from the practical administrative side for their rule and we have no alternative but to live up to the law.

However it is not probable that very many abortions have been reported as living or still-born. The strict carrying out of the rule would increase very considerably the number of deaths in the first day of life because practically all of the abortion children die within a few hours. Of course the rule would also increase the proportion of still-births.

These observations show that our knowledge of the frequency of still-births as well as of early infant deaths is rather scanty even in those parts of the country in the birth registration area. Indeed the census reports do not give the statistics of still-births at all. Hence we must be content with rather loose approximations derived from local boards, hospital reports and reports from other countries in regard to still-births and with somewhat uncertain data in regard to first day death rates of infants.

I shall not go further into details but merely state that a still-birth rate of 4 per cent of all births is about an average and any hospital or practitioner that does not exceed this rate is keeping up to the average and any one who exceeds this rate should revise carefully his practice to determine where he fails in technic or judgment. This statement does not mean however that a still-birth rate of 4 per cent is necessary. I believe that it is too high by a fourth and we should seek to reduce it by better obstetrical practice.

The death rate of infants for the first two weeks of life is about 3.5 per cent on the average. In the U. S. Census Birth Statistics for 1920 it is given as 34.6 per thousand. This is likewise a good average for comparison of individual records but it is also susceptible of reduction by one-fourth by good practice.

There are two classes of still-births. First those where death occurs before labor begins or antepartum. Second, those where death occurs during labor or intrapartum. Somewhat less than half of all still-births are antepartum. They furnish particular obstetrical problems which will be considered later. The intrapartum deaths have more especially to do with obstetrical technic. About six-sevenths of the deaths of new born infants are due to prematurity and congenital debility, and present problems similar to those of antepartum deaths while one-seventh of the deaths in the first two weeks are due to injuries of labor and therefore like intrapartum still-births present problems of obstetrical technic.

Taking the birth rate of the birth registration area of the U. S. for 1920 viz.: 23.7 per thousand of population as applying to the whole country the number of births in the U. S. is about 2,500,000 and in the State of Iowa about 60,000. There are therefore about 100,000 still-births in the United States and about 2,400 in the State of Iowa. About 87,000 infants die annually in the first two weeks of life in the United States and 2,100 in Iowa.

To properly appreciate what this loss of life means I would like to consider for a moment the cost of bearing a child. I once had a wealthy patient who wished a child but was unable to have one of her own. Her sister, who had a family of four children and did not care for more, proposed to bear another child and give it to her sister at or shortly after birth. Before accepting this offer I was asked to tell the interested parties how much risk was involved in bearing a child. Of course I could not say that no risk was taken. During pregnancy besides nausea and vomiting there is the risk of toxemia, antepartum hemorrhage and abortion. During labor there are the risks of hemorrhage, laceration and infection. In the puerperium there may be breast infection. Then there are the after results of pregnancy and labor such as enteroptosis, etc. Stated in figures the mortality risk should be less than 1 per cent for the mother but considerably more for the baby. The risks of injury of course are greater. In spite of my report the undertaking was made but I may add that when the baby was born the

contract was abrogated and the baby remained with its own mother.

The cost of a baby can be estimated in money spent, in time and in the discomfort caused. I would estimate the cost of a baby to a family in moderate circumstances, counting the time of the mother lost for other duties at a fair living wage, as between \$500 and \$2,000. Of course in abnormal cases the cost would be much greater. Suppose the gravida is obliged to be in bed for weeks or months on account of hyperemesis or threatened abortion, the cost might run up into the thousands. We thus see that the economic loss is great, to say nothing of the mental anguish of both parents when after a hard and dangerous labor the baby is still-born or dies shortly post-partum.

Babies are worth considerably more now than they were twenty years ago. At the moment of birth the expectation of life has increased over 10 per cent.; it is now fifty-one years as compared with forty-six years. With the decrease in the death rate came also a general decrease in birth rate. Babies are scarcer, their potential value is greater and our responsibilities for their safe delivery is correspondingly increased.

The antepartum deaths furnish the first obstetrical problem. The two most important causes are syphilis and toxemia. Here the most important problem is the diagnosis of the affection. Syphilis should be rarely overlooked if a careful history were taken in every case. The Wassermann should be made whenever any suspicion of the disease is present. Of course in case a previous still-birth had occurred no efforts at securing a diagnosis should be spared. While a mercurial treatment will often suffice I have come to believe that arsphenamin can be used with advantage and without danger. However I should always give it well diluted as much less likely to cause a reaction and possible danger to pregnancy.

Eclampsyogenic toxemia is a frequent cause of disease of the placenta which leads to undernutrition and disease of the fetus and finally to its death. The diagnosis of toxemia in the mother is not difficult by means of blood-pressure apparatus, examination of the urine and observation of edema of the body. Treatment by diet, rest and elimination is often but not always successful.

The problems of intrapartum fetal death are essentially those of asphyxia neonatorum. Sometimes there is intrauterine suffocation with attempts at intrauterine respiration. The child drowns in the liquor amnii or fluids of the genital tract. In other cases the brain centers are slowly

numbed by the gradual destruction of the fetal circulation and vitiation of the circulating medium. We may say that the fetus is gradually poisoned by increase of its metabolic products, perhaps by eclampsia toxins, by morphine, scopolamin, anesthetics, etc. In other cases intracranial hemorrhage occurs sometimes in spontaneous labor, more often in artificial deliveries. Here injuries to the brain centers may destroy life before delivery or cause asphyxia of varying degrees.

In either of the first cases the child is injured or killed by the disturbance of its circulation and deterioration of its circulating medium. This disturbance may be brought about either by interference with the placental function or by obstructing the circulation in the cord.

During labor a strong uterine contraction shuts off the uterine circulation and so the supply of blood to the placenta. If the contraction lasts but a short time and is followed by a long interval there is little or no fetal disturbance (to be registered in a change in the fetal heart beats). If the uterine contractions are long and hard followed by short intervals the effect on the fetus will be more marked. The increase in the contractions may be spontaneous or it may be due to oxytocics. These excessive uterine contractions may occur before the rupture of the membranes. After the rupture and the escape of the liquor amnii the placenta may be directly compressed by the body or other part of the fetus. As the uterus contracts down the area of the portion of the wall on which the placenta is implanted may be contracted leading to a permanent lessening of the blood supply of the placenta or in some cases causing a partial separation of the placenta. In placenta previa this danger of separation of the placenta is much greater.

The obstruction to the circulation in the cord is most evident in prolapse of the cord but it also occurs, not very infrequently, after rupture of the membranes and loss of the fruit water by compression of the cord between the parts of the fetus and the walls of the maternal passages, for example compression of a coil of cord wound around the neck or shoulders or hip of the fetus and the symphysis pubis or a tight cervix.

Excessive uterine contractions may be spontaneous, they may be excited by manipulations like version or application of forceps or they may be produced by oxytocics like ergot or pituitary extract. Spontaneous excessive uterine contractions may come on during the first stage of labor but they appear much more frequently during the second stage. Sometimes the cause cannot be

discovered. More often they come as a reaction to some obstruction to labor like a malpresentation or a malposition, obstruction in the passages, etc. They may last only a short time or they may persist to the end of labor even for hours. They may be extremely painful or they may cause so little discomfort that the patient may not report them and they are overlooked entirely or found accidentally by the attendants.

In a paper published in 1915 in the *Journal of the American Medical Association* I have called attention to this form of dystocia and then gave my reasons for attributing about one-fourth of all intrapartum fetal deaths to this cause as the sole factor. Moreover many of the fetal deaths occurring in other kinds of dystocia like contracted pelves, malpositions, etc., are in reality due to the same placental disturbance caused by excessive uterine contractions. Hence I held that at least half of the intrapartum still-births were due to this cause. Further observation has only strengthened my belief in the truth of this estimate.

It seems to me therefore that the study of uterine contractions during labor and especially during the second stage is very important. Hence in the instruction of medical students and also of nurses I lay especial stress upon the methods of determining the length and intensity of uterine contractions and also upon the counting of the fetal heart tones. Acting upon the theory that what is worth doing is worth recording I insist that all findings be immediately recorded in the history. In the rules for the maternity department of the hospital the interne is directed "on admitting a patient to determine" among other things also "fetal heart tones and movements of the fetus and the uterine contractions." In the conduct of labor the interne shall, among other things, "determine every two hours and oftener if necessary the length, frequency and intensity of uterine contractions." During the second stage these determinations shall be made at least every fifteen minutes. It is also stated that "the interne shall promptly record or dictate and have recorded all findings." The interne is also required to report to the attending obstetrician when the fetal heart tones are abnormal, when the uterine contractions are excessive as well as other abnormal conditions. The nurse left in charge of a patient is directed to record the frequency and severity of the pains and the fetal heart tones every thirty minutes. Nurses are taught and easily learn to count the fetal heart tones and also by palpation of the abdomen to determine the condition of the uterus. They are

especially cautioned against relying upon the outcries of the mother to indicate the uterine contractions. The record chart has blank spaces for recording the contractions and intervals and under contractions it is expected that the length shall be given in seconds dating from the beginning of hardening to the end no attention being paid to the pain expressed by the patient. The intensity is recorded as poor, fair, good or very good.

With such rules faithfully observed the diagnosis of excessive uterine contractions and threatened danger to the fetus is made early and proper, timely treatment can be instituted. I am sure that a considerable percentage of intrapartum fetal deaths can be prevented by this system. That such a system can be carried out in any well organized hospital may be admitted. But how is it in obstetrical practice outside of a hospital? I am not unaware of the difficulties in such practice for I have had my share of obstetrical work in homes of all classes. All will admit that it is well to have an ideal toward which we can strive even if its attainment is impossible. I believe that every physician doing much out patient or home obstetrics should have a nurse, either a graduate nurse or one trained by himself, whom he can send to watch a patient during her labor. It ought not to be difficult to collect a day's fee for such an assistant. Even plumbers have their helpers who must be paid.

As opposed to the spontaneous excessive uterine contractions we have the factitious or artificially produced excessive contractions. These factitious contractions may be divided into two groups, those produced by oxytocics and those produced by manipulation.

The chief oxytocics with which we have to do are castor oil, quinine, ergot, pituitary extract and the amines histamin and tyramin. Although castor oil is used very often to bring on labor it is generally given in combination with quinine and it is somewhat doubtful if it has much more direct action on the uterus than some other cathartics. All cathartics have some tendency to excite labor pains and are therefore used with care during pregnancy. Vigorous intestinal action however produced stimulates the uterus like a kind of intestinal massage. Quinine has a direct action on the uterine muscle but generally only when given in such large doses as to cause disagreeable general symptoms and it is rarely given except to induce labor. I have heard of cases where the usual dose of one and one-half ounces of castor oil and ten grains of quinine given to

induce labor has caused excessive uterine contractions that killed the fetus but I have never seen such results although I have used the combination frequently and must conclude that such results are rare. However it is well to remember the possibility of such action and be prepared to counteract it.

Ergot long has been known as a dangerous oxytocic in labor and its use has been discouraged by nearly all authorities. The valuable experimental work of Dale has shown that the action of ergot is due to the three active principles, ergotoxin, histamin and tyramin. These substances have somewhat different physiological actions on the nerves and muscles of the uterus and because they are present in different amounts in different specimens of the drug the action is not always the same or predicable. However the drug as a rule causes long contractions, the curve remaining high and a large therapeutic dose may cause a veritable tetany of the uterus. This property makes the drug very valuable for use in postpartum hemorrhage but dangerous before delivery of the child. If used at all it should be employed under the same conditions as pituitrin which will be discussed presently. As pituitrin is better controlled than ergot the latter may be reserved for use only in the puerperium.

The action on the uterus of the posterior and connecting lobes of the pituitary gland is so well known and the extract is in such general use that it is hardly necessary to spend time in describing it. It should be noted however that a small dose, three or four minims, is often sufficient to stimulate vigorous contractions and that this should be always the initial dose if given during labor. If excessive contractions are induced by this dose they rarely last more than fifteen minutes and can be controlled before they cause the death of the fetus. This remarkable gland product can be used to induce labor at term or in delayed labor—not so satisfactorily to induce premature labor. It is especially indicated to induce labor when spontaneous labor is delayed after premature rupture of the membranes and also when metrorrhysis is employed. It is very rarely indicated in the first stage of labor. During the second stage it should be used in secondary uterine inertia after the cervix is completely dilated and the head is in the excavation or straits and when there is no serious obstacle to the exit of the child through the straits and outlet. It is particularly valuable after certain rectifying operations such as changing a face to skull or after manual rotation from a persistent o.p. position.

A study of the intrapartum still-births and

early infant deaths in a hospital in Chicago with which I am connected and which has about 750 births a year, showed that at least three or four and probably more deaths last year could be attributed to the use of pituitrin. After a discussion of the subject by the medical staff a resolution was passed to post a warning to all physicians of the danger of pituitrin and requesting that the drug be used with great care. The effect of this notice has been to decrease the use of pituitrin considerably and especially to lessen the doses given. So far this year there has been only one death that was probably due to pituitrin.

My own rules for determining the indications for pituitrin are as follows: five to ten contractions and intervals are observed and measured as previously described. If it is found that the average length of fair to good contractions is at least half as long as the average interval pituitrin is contraindicated. For example if the contractions average forty-five seconds in length and are of fair intensity and the average interval is one and one-half minutes then pituitrin shall not be given. If the contractions occupy not more than one-fifth of the time, that is, if the interval is four times as long as the contraction and if labor does not progress and if all conditions for giving the drug are present then it may be used always provided that everything is in readiness for prompt delivery if danger to the fetus arises. All these observations are very carefully recorded and could be used in a defense of a possible malpractice suit which might be brought if the child should be still-born. Without such care one might have some difficulty to justify his practice to himself, his patient or to a court.

Histamin and tryptamin have marked oxytocic powers and have been used in Germany considerably in a combination known as tenosin. Because of the possibility of getting exact dosage it would seem a good addition to our armamentarium but the cost of producing these drugs synthetically is great and the demand for them would need to be created.

The other group of factors that produce factitious excessive uterine contractions are manipulations. Here we class methods of dilating the uterus, such as digital dilation, bag dilation and dilation with metal dilators like Bossi's. Forceps also act to stimulate contractions. Version likewise causes strong contractions, a result not desired.

If we now ask how dangerous contractions can be prevented we must admit that we are sometimes ignorant of the cause of spontaneous excessive contractions. Here treatment of the condi-

tion not prophylaxis is all that we can do. Spontaneous excessive contractions that are the result of dystocia can be prevented at times by proper treatment of the dystocia. Prevention of factitious excessive contractions consists in avoidance of oxytocics and unnecessary instrumentation.

The treatment of excessive uterine contractions is generally hypodermic administration of morphine or the use of ether or N₂O, if the danger is not urgent we may give benzyl benzoate in 20 minim doses repeated every half hour for three hours. It is also desirable to use this drug in combination with morphine or with the anesthetic.

If in spite of the morphine or the anesthetic the excessive contractions continue and the fetal heart tones show danger to the fetal life it is necessary that the child should be delivered as rapidly as possible unless the risk of interference to the mother counterbalances the danger to the child. If the head is in the outlet, that is down on the perineum and held back by a hard, unyielding vulvar ring, episiotomy may be all that is required or perhaps low forceps. If the head is higher up but no contraction of the outlet exists the cervix should be completely dilated by incision if necessary and then forceps applied generally after a prophylactic episiotomy. If anterior rotation of the occiput has not yet occurred the artificial rotation should be done with the hand or by the Scanzoni method before extraction is attempted. Unless fairly easy and quick extraction can be accomplished as when the head has not reached the excavation or when the cervix and vagina are small interference should not be attempted for it is apt to increase uterine contractions and the danger of a still-birth.

In connection with the use of morphine and anesthetics we may approach another obstetric problem. Do analgesics and anesthetics cause still-births or asphyxia neonatorum? In the study of the hospital statistics of which I spoke I could not find that a single one of our still-births could be attributed to either. It is my practice in long and painful labors to give one and sometimes two or three doses of morphine and scopolamin in the first stages of labor. The dosage is generally morphine sulphate gr. $\frac{1}{6}$ to $\frac{1}{4}$ and scopolamin hybromide gr. 1/150. This is given distinctly as an analgesic and not to produce twilight sleep. The patient secures three or four hours rest and is in much better condition to go through the second stage. If an anesthetic is given then less is required. I believe that most of the alkaloid is eliminated in four hours and therefore if the hypodermic is given not less than

three to four hours before the expected termination of labor no harm can be done. Anesthetics are given in the second stage of labor to the obstetric degree, that is, the anesthetic is given at the beginning of a pain three or four inhalations being sufficient after which the patient bears down. There is no doubt that considerable anesthetic gets into the child's circulation through the placenta and it may render the child somewhat narcotized at birth. When we first began the use of nitrous oxide with the crude apparatus first employed diluting the gas only with air I often found the child narcotized to a state of asphyxia but I never lost a child in this way. Now with the combination of N₂O and O these results are less common. I have no doubt that the excessive use of anesthetics and the use of alkaloids in twilight sleep is dangerous to the child and should be discouraged.

Other causes of intrapartum and early infancy mortality are intrapartum hemorrhage as in placenta previa, etc., and eclampsia. More important are malpresentations. I have estimated that this makes up 25 per cent of fetal deaths and many deaths of the first and second week of infancy. Here breech presentations are the greatest factor. The question of external version before labor begins and the proper management of labors are therefore very important problems. I have time only to insist on the danger of premature interference in any kind of breech presentation. Never should premature extraction be attempted without complete dilatation of the cervix.

Interference in skull presentation causes 30 per cent. of intrapartum fetal deaths and an equal or greater number of early infant deaths not due to prematurity. Forceps and especially high forceps injuries have heretofore been one of the chief causes of still-birth but recently since version and extraction have become so popular no doubt we shall soon find that deaths from this practice are more common. The danger of high forceps is so great that the operation should be undertaken only in extreme cases. Forceps in cases of occiput right or left posterior before the head is in the excavation are almost always unnecessary and dangerous. Wait for descent and spontaneous rotation will occur.

To Resume:

1. The number of still-births in the United States is about 4 per cent. of the number of births and the number of deaths in the first two weeks of life is about 3.5 per cent. of the number of births. In other words it is estimated that there are about 100,000 still-births in the United States

every year and about 87,000 deaths of infants less than two weeks old; in Iowa 2,400 still births and 2,100 infant deaths.

2. The cost of a child at birth is much greater than it was twenty or thirty years ago. Computing time lost by the mother at current wage rates and considering the outlay for nursing and medical attendance it is estimated that the cost of a baby in a family in average good circumstances is \$500. With the decline in the birth rate and death rate and with a 10 per cent increase in expectation of life at birth, from forty-six to fifty-one years, babies are worth considerably more than they were twenty years ago and our responsibility for their safe delivery is correspondingly increased.

3. Fetal deaths may occur antepartum or intrapartum. The most important causes of antepartum deaths are syphilis and toxemia which injures the placenta. The majority of intrapartum fetal deaths are due to disturbances of placental circulation due to excessive contractions of the uterus or to separation of the placenta. A few are due to obstructions in the cord. Some are due to injuries to the brain and spinal cord and perhaps a few are poisoned by analgesics or anesthetics.

4. Excessive contractions of the uterus are spontaneous often arising as a reaction to obstructed labor or factitious, caused by oxytocics or by manipulation.

5. On account of the great importance of excessive uterine contractions in causing still-births labor should be watched carefully, especially during the second stage.

6. Probably one-fourth of all still-births and one-fourth of all deaths occurring during the first two weeks of life could be prevented by proper management of labor. This would consist in careful watching the uterine forces, control of excessive contractions, prompt interference, when demanded and when the conditions for interference are present, avoidance of all unnecessary and improper operations.

WAR LOSS IN POPULATION

According to the report of a statistical research conducted by the Society for Studying the Social Consequences of the War, of Copenhagen, ten European nations engaged in the war sustained a potential loss in population of 35,320,000 persons since 1914. Of this number 9,819,000 persons were killed in war; 5,301,000 deaths were due to augmentation of mortality, economic blockades and war epidemics; 20,200,000 fall in birth rate due to the mobilization of 56,000,000 men.

RECENT PROGRESS IN THE TREATMENT OF CHRONIC EMPYEMA*

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The more recent trend in the treatment of chronic empyema has been toward conservatism. The enormous increase in the incidence of acute empyema during the influenza pandemic afforded unparalleled opportunities for testing the methods of treatment previously accepted. The disappointing result is a matter of history. It was learned, but at a grievous cost in human lives, that the treatment of empyema is not to be summed up in the simple formula, "rib resection and drainage." Aspiration and closed drainage irrigations periodically introduced and as often discarded found their indications based not on empiricism, but on a sound conception of the disturbed physiology as well as the pathologic anatomy involved.

Observations of acute cases in the process of transition to the chronic type, and the study of large numbers of chronic cases led to a more adequate comprehension of the causes of chronicity. Dealing with the conditions which predispose to or maintain chronicity, and the adaptation of the antiseptic solution irrigation to its treatment, constitute the essentials of real progress in the treatment of chronic empyema.

The causes of chronicity most generally observed are faulty drainage, dense adhesions the result of delayed diagnosis, tuberculous infection, bronchial fistula, foreign bodies, and certain constitutional conditions apparently associated with the inability of the organism to cope with the infection. Rarer conditions such as actinomycosis, and pulmonary fibrosis occurring during the collapsed state of the lung, and empyema following complete collapse as in traumatic pneumothorax, are occasionally observed as causes of chronicity.

Faulty drainage in acute empyema seems by far the most common cause of chronic empyema. The opening may be too high or too far forward so that dependent drainage is not secured, but more often the drainage opening is allowed to narrow down in the presence of a suppurating cavity of considerable size. Uninterrupted, adequate drainage must be maintained in order to secure obliteration of a suppurating cavity. Secondary pockets communicating with the main cavity by a narrow sinus occur in streptococcal empyema, and unless recognized and drained, they

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almost inevitably lead to chronicity. If suspected, such cavities may be located by roentgen ray following injection of bismuth in suspension.

Secondarily infected tuberculous empyema is fairly common and is the most persistently chronic of all types. Many surgeons of experience consider it practically incurable. Its recognition is of the greatest importance from the standpoint of both prognosis and treatment. As pointed out in a previous article,² a history of preceding pleurisy, and the presence of tuberculosis elsewhere, particularly in the lungs, are of much significance. The presence of tuberculosis bacilli in the discharge may be demonstrated, but failure to demonstrate them by no means excludes tuberculosis. Often the diagnosis is first made at operation from microscopic examination of the excised pleura. Many cases run a protracted course. In one such case observed at the Mayo Clinic the empyema had been present for twenty-three years. The fact should be better known that it is the mixed tuberculous and pyogenic infection that makes these cases of such serious import. In the case of any patient suspected of being tuberculous, a pleural effusion should be cultured before drainage. A sterile exudate should be considered tuberculous until proved otherwise. If tuberculous, open drainage should not be instituted as that is certain to lead to secondary infection.

Empyema associated with bronchial fistula is prone to become chronic. In such cases the lung expands slowly, probably chiefly because the effect of coughing, straining, and so forth, in the presence of a fistula does not produce increased intrapulmonary pressure. There is also usually associated purulent bronchitis, or bronchiectasis with discharge of a part of the resulting secretion into the empyema cavity. When there is no external drainage patients with bronchial fistula may raise large amounts of purulent sputum and the condition may be mistaken for pulmonary abscess or bronchiectasis. Aspiration of the pus from the pleural cavity usually suffices to establish the diagnosis. Occasionally filling the cavity with salt solution, or injecting a little methylene blue solution is necessary to demonstrate the presence of a small bronchial fistula. The patient will taste the salt solution or expectorate blue-stained sputum, as the case may be. Irritating antiseptics such as the hypochlorite solution should not be used until after the possibility of a bronchial fistula has been excluded.

Of the foreign bodies which may be the cause of a persistent fistula or cavity, lost drainage material is perhaps the most common. The possi-

bility of the presence of sequestered fragments of denuded rib stumps, infected at operation, are probably less often recognized. I have had a number of such cases of several years' duration.

In some cases chronicity seems to be owing to a lack of healing power of the tissues. The chest wall may be collapsed so that the surfaces are in contact and maintain good drainage, and yet healing does not result. This is characteristic of tuberculous infections, but occurs also in other constitutional diseases such as syphilis, anemia, nephritis, and amyloidosis, if patients are greatly debilitated. Amyloidosis is associated, not infrequently, with chronic suppuration of many years' duration. In other instances in which there is obliteration of the cavity, recurrence is probably dependent on the presence of latent infection buried in the thickened pleura. Under such conditions constitutional treatment to improve the general health is obviously a prerequisite to successful treatment of the localized process.

Pneumonitis resulting in fibrosis of the lung, although difficult to recognize, probably is responsible for the failure of the lung to expand in some cases. Fixation of the lung in a completely collapsed condition is observed in certain cases of traumatic pneumothorax followed by empyema, and also in cases of acute empyema drained in the seropurulent stage. Such cases may later require extensive collapse of the chest wall to obliterate the cavity.

Two or more etiologic factors predisposing to chronicity may be present in any one case. Rational treatment will always depend, in a large measure, on their recognition and proper evaluation.

The treatment of chronic empyema prior to the introduction of Dakin's solution, as outlined in a previous article,¹ was radical surgery which was in a sense destructive. Obliteration of large cavities by collapse of the chest wall required extensive resection of ribs and often of parietal pleura, muscles, and perhaps scapula, or the soft tissues were used to help obliterate the cavity. These extensive operations were performed usually without any preliminary treatment, on patients more or less septic, debilitated, anemic, and emaciated. Extensive areas of the operative field were smeared, if not flooded, with pus. A relatively high mortality, slow convalescence, deformity and impairment of function resulted.

The only procedure representing a constructive type of surgery was the little used decortication operation. The more conservative methods of non-operative treatment, such as attempted sterilization of the cavity by the injection of

formalin in glycerin, or the use of bismuth paste, were regarded as of very limited application.

Happily, we are now in a position to cure some of these patients without having to resort to operative procedures, and many are cured with only a minor operation. In practically all cases in which more radical measures are found to be necessary we are able to sterilize the field or at least to attenuate any bacteria present to such a degree that post-operative infection from this source is not a menace. In the process of such treatment the patient gains weight and strength. His color improves, and, except in cases in which the chronic suppuration has resulted in irreparable damage, as represented by a nephritis, myocarditis, or general amyloidosis, the patient is converted from a poor to a relatively good surgical risk.

These results are achieved by irrigation with the hypochlorite solution. Other antiseptics have their advocates, and there are those who question whether equally good results might not be secured by irrigation with normal saline solution. The discussion of the relative merits of these various solutions is outside the limits set for this paper. It seems pertinent, however, to point out that the hypochlorite solution, besides acting mechanically as could saline solution, is also markedly bactericidal and proteolytic; by virtue of these properties it dissolves the necrotic tissue and debris and exposes all infected areas to the bactericidal action, making sterilization complete. Whatever may be said in favor of any other solution does not alter any of these demonstrated facts with regard to the efficacy of the hypochlorite solution.

The considerations essential to success in the use of the hypochlorite solution are: that it must be the proper strength, it must gain access to all infected surfaces and remain in contact with these surfaces long enough to exert its lytic and bactericidal action, it must be renewed often, and it must be of approximately neutral reaction; otherwise it is not Dakin's solution. Dakin specified that the content of free chlorin, which is the active principle, should be between 0.45 and 0.5 per cent. One difficulty with this solution is that it deteriorates rapidly, especially in sunlight, losing its active chlorin. One of the reasons for the greatly varying degree of success reported following its use is doubtless owing to the fact that solutions of greatly varying strength have been used.

I have found the "hychlorite" a convenient solution to use. It is fairly stable and being originally eight times the required chlorin strength permits of dilutions that contain the required amount of chlorin even after the stock solution

has stood for a long time. Another advantage is that a solution containing more than 0.5 per cent of chlorin can be readily prepared. A more concentrated solution is advantageous in many cases of chronic empyema of long duration.

The technic employed at the Mayo Clinic is very simple. Most of the patients with chronic empyema have draining sinuses. A rubber catheter which fits the sinus snugly is inserted and the pus evacuated by aspiration with a glass syringe of from 30 to 60 c.c. capacity. The cavity is measured by filling it with saline solution under gravity pressure of perhaps 10 to 20 cm. using the barrel of the syringe as a funnel. The cavity is washed clean by alternately injecting and withdrawing salt solution with the syringe, great care being used not to inject an amount greater than that which represents half the capacity of the cavity. If the patient has not coughed or tasted the solution during this procedure the hypochlorite is used for further irrigations, which are performed at intervals of from one to two hours during the day and three to four times at night. The decrease in size of the cavity is ascertained by measuring its capacity once a week. The rate at which the cavity decreases varies with the size at onset, the duration, and many other factors, but generally the progressive decrease in capacity may be expressed graphically by a curve showing a rapid fall the first two weeks, then one less abrupt so that the smaller the cavity becomes, the less the decrease proportionate to the original. In most cases the cavity would probably be completely obliterated in time, but a stage is reached after which the further decrease is quite slow. Usually this occurs when the cavity approximates 50 to 100 c.c. in capacity. If the residual cavity is of more than 100 c.c. capacity, decortication is the operation of choice, but in cases of long standing, and in those in which the cavity is shallow so that the amount of lung expansion would be at best small, a rib resection is usually performed followed by further irrigation. For large residual cavities, a decortication is, in my opinion, advisable even if an additional circumscribed plastic resection may be necessary later.

Chemical decortication by an agent which would remove all the thickening of the visceral pleura without injury to the lung would be a distinct improvement over surgical decortication, which is limited to cases in which the pleura will separate, is often incomplete, and may result in a tear into the lung cortex. A 2 per cent alcoholic solution of gentian violet will remove the thickened pleura, but sufficient experience has not yet been accumulated to determine its value.

In case the cavity is small, under 100 c.c. capacity, a rib resection alone is performed, or the parietal pleura, if very thick and rigid, may also be excised. The irrigation is then continued. For very small cavities resection of a few centimeters of one rib only may suffice.

Other methods of dealing with a residual sterilized cavity have been advocated. The establishment of a sterile pneumothorax by excision of the sinus tract or allowing the sinus to close spontaneously would seem ideal. Unfortunately if there is a recurrence of the suppurative process, as may develop, the adhesions are prone to dissolve away and the cavity enlarge rapidly so that the ground gained is lost. Probably in many of the cases in which cures are reported by this method investigation would show that such recurrences had developed. There may be no immediate marked symptoms of such recurrence. I have seen accumulations of pus latent for years but associated with nephritis and amyloidosis. Perforation into a bronchus may supervene especially in cases in which there is not sufficient thickening of the visceral pleura to protect the lung.

Another method which has been used with marked success for a period of observation extending over many months is one followed by Colonel Keller at the Walter Reed Hospital. He performs a preliminary rib resection and irrigates the cavity with hypochlorite solution until seven successive sterile cultures are obtained from smears from the depths of the cavity. The soft tissues are then mobilized and sutured in layers without further drainage. In my limited experience with this method the results have been promising.

A contraindication to the use of the hypochlorite solution by the closed method is the presence of a bronchial fistula of such size that in coughing the patient tastes salt solution when it is instilled. In some instances irrigation, even with hypochlorite, may still be possible with the patient in a certain position, but, generally speaking, open drainage is indicated. If the fistula can be exposed following rib resection, irrigation with hypochlorite solution is usually quite feasible if the mouth of the fistula is temporarily plugged before each irrigation. The fistula is cauterized at intervals with the actual cautery, or with silver nitrate, to destroy its epithelial lining. This is usually sufficient to bring about closure. Sometimes the bronchus lies near the periphery of the cavity in which case the gradually progressing adhesions between the parietal and visceral pleura will help to obliterate it. Rarely a suture or

plastic operation is necessary for closure of the bronchus.

In some instances a purulent discharge persists after prolonged irrigation by the closed method. This is usually owing to a secondary, imperfectly drained pocket, or there may be a foreign body present. In such instances rib resection and exploration is performed and secondary pockets are connected with the main pocket.

Fistulas recognized as tuberculous should be irrigated with hypochlorite solution with great caution, if at all. Sometimes the general condition of the patient improves because of the clearing up of the secondary infection, but if the lung is not protected by a thickened visceral pleura there may be bleeding and exacerbation of temperature. In tuberculous cases, in which there is involvement of the lungs, irrigation with salt solution is safer.

In operations for chronic empyema all possible measures should be taken to minimize the risk. A high operative mortality in the treatment of this condition, which, as a rule, is not inconsistent with years of life, seems unjustifiable. Local anesthesia, alone, or combined with gas and oxygen analgesia is, in my opinion, the safest, and except in cases previously operated on in which there is much scar tissue, greatly thickened pleura, and much deformed or fused regenerated rib, such anesthesia has proved very satisfactory. A two-stage or several-stage operation is probably always less hazardous when radical surgery finally proves necessary.

In recapitulation it may be said that, (1) recognition of the cause of chronicity is the first step towards intelligent, efficient treatment of chronic empyema, (2) each case is a law unto itself with regard to treatment, and (3) conservation of life, structure, and function should be the guiding principle, and chemical sterilization has made possible distinct progress in this direction.

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FOREIGN MEDICAL DEGREES NOT RECOGNIZED IN MEXICO

The Central University of Mexico, which is entrusted with the revalidation of foreign diplomas, has announced that hereafter, in order to prevent abuses by quacks, no foreign diplomas will be recognized. Physicians graduated in foreign countries will have to submit to a new and complete examination in order to have their degrees recognized in Mexico.—Federation Bulletin.

NEWER ASPECTS OF URINARY SURGERY*

DANIEL N. EISENDRATH, A.B., M.D., Chicago

I have chosen this as the subject of my paper because the recent advances in diagnostic methods and the change in our attitude toward the treatment of certain affections of the urinary tract are not as widely known as they deserve to be. A good clinical history and a careful physical examination are still the first and essential steps in making a thorough urological study of a case. It is at this point, however, where those who are not trained to use the special diagnostic methods must stop. I will only name the latter without making any effort to describe them as no doubt they are familiar to everyone. They include the employment of the following:

1. Urethroscope (both anterior and posterior).
2. The cystoscope and ureteral catheters (both ordinary and shadowgraph).
3. The chemical and bacteriological study of the urine collected separately from each kidney.
4. The chemistry of the blood.
5. The tests for determination of the functional capacity of the kidneys.
6. Pyelography, ureterography and cystography.
7. Radiography of the urinary tract (ordinary, antero-posterior and lateral as well as stereoscopic exposures).

Everyone who wishes to make a diagnosis of a surgical affection of either the upper or lower urinary tract must be ready to apply all of these methods. It is self-evident that it will not be necessary to employ all of them in any given case, but the ability to do so is essential in order to do justice to the patient.

It is superfluous to do more than mention the various diagnostic methods, but of one I wish to speak a little more in detail.

Pyelography—Of all of the special methods, I have been especially impressed with the advances made in the use of the one commonly known under the name of pyelography. Voelcker and von Lichtenberg in 1906 found that when solutions which are not penetrated by the x-ray are injected into any portion of the urinary tract, one obtains on the x-ray plate a shadow corresponding exactly in size and contour to the lumen of the special organ to be studied. A pyelogram, ureterogram or cystogram signifies, therefore, the shadow of the renal pelvis, ureter and bladder respectively. Those who wish to interpret any changes due to disease must of course be familiar

with the outline and size of the shadows of the corresponding normal cavities. (Figures 1 and 2.)

In the earlier years of pyelography there were a number of reports of fatalities following the introduction of the solution into the upper urinary tract. These have been proven to be the result of two factors: (a) injecting the liquid under such a pressure that it was forced through the kidney into the general circulation, and (b) to the toxic action of the drug itself. My own experimental

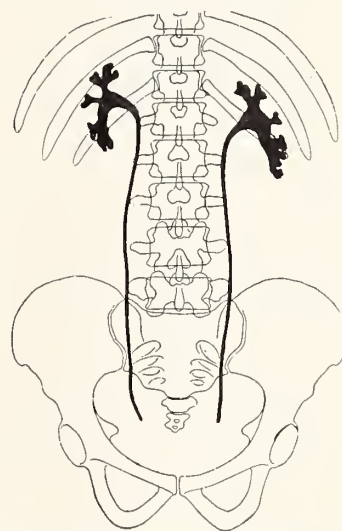


Figure 1. Tracing of pyelogram of normal kidneys from one of author's cases. Note on right side the typical division into upper, middle and lower calyces.

work¹ shows that when the solution is injected under a pressure of 100 m.m. Hg. the animals die of pulmonary embolism. When, however, the solution is permitted to flow simply by gravity, the burette being held three feet above the x-ray table, there is absolutely no risk. The second danger was overcome when Weld and others showed that the majority of the substances like Collargol and similar silver salts as well as Thorium, were very toxic. Since Cameron has called attention to the fact that sodium bromide or iodide in 25 per cent. solution gave equally as good shadows as the more toxic substances, we have abandoned the latter. The experience of all who employ pyelography is that it is not more dangerous than simple ureteral catheterization if carried out with similar limitations.

I will only enumerate a few of the many applications of this very valuable addition to our diagnostic resources.

1. As an aid in the differentiation of tumors of other abdominal viscera from those of the kidneys, a normal pyelogram (figure 1) will as a rule exclude the kidney, especially if the latter is shown in its normal location.

*Read before the Scott County Medical Society, Davenport, Iowa, September 5, 1922.

1. The Effects of Collargol as Employed in Pyelography, J. A. M. A., Jan. 9, 1915, 64, 128.

2. In the diagnosis of hydronephrosis (figure 3) alone or accompanied by a hydroureter.

3. In the diagnosis of destruction of the kidney substance as occurs in a tuberculous or non-tuberculous pyonephrosis.

4. In neoplasms of the kidney, the spider-like outline of the pyelogram is quite typical.

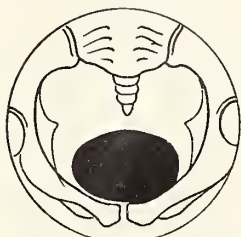


Figure 2. Cystogram of normal bladder filled with 100 c.c. of 7 per cent. Potassium Iodide solution. Axial exposure taken by Sgalitzer technic.

5. In the diagnosis of renal calculi and in differentiating these from shadows due to conditions outside of the urinary tract such as gall-stones, calcified lymph nodes, etc.

6. In the recognition of congenital anomalies of the urinary tract such as double kidney (figure 4), ectopia, solitary or hypoplastic kidneys.

The above additions to our diagnostic data apply especially to pyelography but ureterography and cystography have given invaluable information in many other diseases. Of these I will only mention the great aid rendered by the shadow-

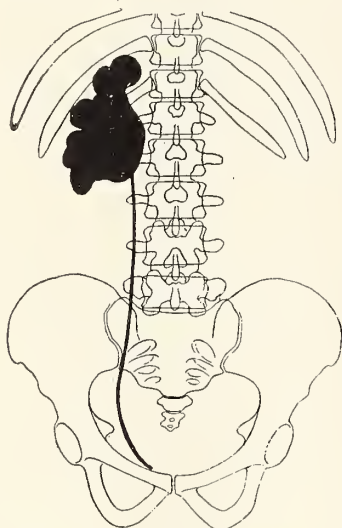


Figure 3. Pyelogram of large hydronephrosis. (X-ray catheter in ureter.)

graph catheter and ureterography in the differential diagnosis of shadows due to ureteral calculi from those of many simulating conditions which lie within the ureter (strictures) or outside of it.

The employment of cystography is of the greatest aid in the diagnosis of the size, location and number of bladder (figure 5) and ureteral diverticula.

Suffice it to say that the urologist today finds pyelography, ureterography and cystography indispensable to a complete study of the majority of cases.

In conformation with the title of the paper I will now enumerate a few of the affections in which our methods of treatment have either been endorsed or changed by increased experience. These will be considered briefly under separate headings:

Treatment of Renal Tuberculosis

There has been practically unanimity of opinion in the past ten years in the view that early nephrectomy offered the best prospect of a permanent cure. It has required much patient and painstaking

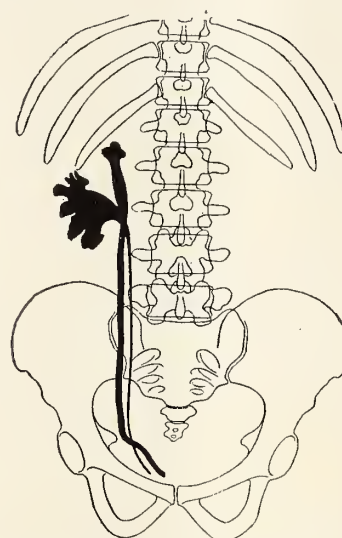


Figure 4. Pyelogram of case of double kidney with hydronephrosis of lower half (Legueu).

work to convey this opinion to the rank and file, who first see these cases. Thanks, however, to their co-operation and to the improvements in diagnostic methods a larger percentage of early cases are seen today than five or ten years ago. The result of this is that the chances of permanent recovery can now be definitely stated as being from 55 to 60 per cent. when the disease is still confined to one kidney. The general consensus of opinion is that bilateral cases are but little benefited by removal of the more affected kidney. The chances of spontaneous recovery are so slight as to be almost eliminated from consideration, although an occasional case is reported where an apparently nonoperative cure occurred. I have been greatly interested in a recent paper by Wildbolz of Bern which I heard while abroad. He has performed 445 nephrectomies for tuberculosis. He was able to follow up 101 of 125 cases reported by him in 1910. In the majority of the 101 a sufficiently long period had elapsed (ten to fifteen years) to justify one in speaking of a

permanent cure. Of these 101 cases, four died immediately after operation and forty during the following years. Fifty-five and seven tenths per cent. (58 of the 101) have remained completely healed for ten to fifteen years. These statistics are extremely valuable because the cases have been followed a sufficient length of time to draw definite conclusions as to the value of nephrectomy.

Lavage and Drainage of the Renal Pelvis

These I consider two of the most important additions to our treatment of renal infections of non-tuberculous origin. They have enabled us to conserve a large number of kidneys which were formerly removed. The ureteral catheter is in-

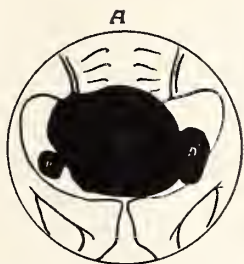


Figure 5. Cystogram showing three diverticula of bladder (Sgalitzer).

serted as far as the renal pelvis and a solution injected directly into the pelvis itself. Various drugs such as the silver salts, mercurochrome and others have been employed. In my own experience the best results have been obtained with nitrate of silver varying in strength from one-half to three per cent. In the pyelitis of children, of pregnancy and of the puerparium which resist all internal medication, the fever and other symptoms often disappear after a single lavage. In the ordinary pyelitis of adults the success of lavage is equally striking. It has been suggested by Caulk that still greater benefit would result if the ureteral catheter were left *in situ* for one or two days, especially in cases of infected hydronephrosis. It would seem as though this method is well worthy of a trial especially preliminary to operative procedures, as the patients are enabled to recover from the extremely septic condition in which we find so many.

One aspect of renal infection to which I wish to direct your attention is that a fairly large number present no localizing signs. By this I mean that in the majority of cases of pyelitis for example, the patient has all of the symptoms of severe infection—including fever of a remittent or intermittent type—without any pain, swelling, etc., which would indicate that the source of infection is in the kidney. In my clinic we consider

the possibility of a kidney infection in every obscure case of fever.

Non-operative Removal of Ureteral Calculi

Our viewpoint regarding ureteral calculi is undergoing great changes. Unless a ureteral calculus is very large or there are evidences of a severe renal infection one should make one or more attempts to deliver the calculus or calculi by non-operative means. When this method of treatment was first employed the principal indication was its use in calculi located within the wall of the bladder or immediately above. With the present improved methods, we now employ non-operative removal for calculi in any portion of the ureter.

It was the custom early in the history of the subject to inject glycerine, olive oil or albolene above the calculus but we now employ some means of dilating the ureter and attempt to relax the ureteral musculature by the use of procain or papaverin. I have been successful in a number of cases and shall always give the patient the benefit of non-operative removal unless the calculus is too large or there is an accompanying acute renal infection. In the majority of cases where the calculus is small it is possible to cause it to be expelled without operation.

Space will not permit of a description of the various methods for non-operative delivery of ureteral calculi because I have only attempted to give you a bird's eye view of some of the more recent advances in urinary surgery which should be familiar even to those not working in this special field.

PHYSICIANS WHO LOCATED IN IOWA IN THE PERIOD BETWEEN 1850 AND 1860

D. S. FAIRCHILD, M.D., F.A.C.S., Clinton

DR. ARCHIBOLD STEPHENS MAXWELL

Dr. Archibold Stephens Maxwell located in Davenport in 1852. We are in part indebted to Dr. A. W. Cantwell for the following biographical sketch of Dr. Maxwell, who in accordance with resolutions adopted by the Scott County Medical Society April 3, 1884, prepared and published in the Iowa State Medical Reporter, Volume 1, page 137, an account of Dr. Maxwell's work.

Dr. A. S. Maxwell was born in Tuscarawas county, Ohio, June 22, 1818. As a boy, he worked on a farm, but in 1834 he gave up farming and entered the printing office of the "Findley

Whig." Three years later became foreman. In 1839 entered into partnership with Colonel John Meredith in publishing the "Richland Shield and Banner," Mansfield, Ohio.

During his leisure hours Maxwell read law in the office of Judge Brinkerhoff. He now realized that the education obtained in the country district school was not sufficient to meet the requirements of the life set before him and entered the Ashland Academy from which he graduated with honor. In the political campaign of 1842, he was attacked with laryngitis which so affected his voice that he abandoned the practice of law and entered the office of Dr. John M. Cook of Berlin, Ohio, to study medicine and graduated from the medical department of Hudson College at Cleveland, Ohio, in 1847.

After graduation Dr. Maxwell entered into partnership with his preceptor, Dr. John M. Cook, married his step-daughter and remained with him five years. The duties of a country practitioner were too exacting for Dr. Maxwell and in consequence of failing health, he prepared himself for the treatment of diseases of the eye, nose and throat, and located in Davenport, Iowa, in 1855.

When Dr. Maxwell located in Davenport, he invested in real estate at boom prices, and when the financial crisis of 1856-1857 came, nearly all his property was swept away, and he was forced to resume general practice, with much success.

Soon after the beginning of the Civil War, Dr. Maxwell was appointed by his early friend, Gov. Kirkwood, surgeon-in-chief of Hospitals No. 6 and 8 at Keokuk. During this service, he filled the chair of physiology and pathology in the Keokuk Medical College. Later, Dr. Maxwell was ordered to New Orleans for hospital work.

In 1864 Dr. Maxwell resigned his commission and returned to Davenport to resume general practice. The exactions of a large practice at last so impaired his health, that he was led to seek a warmer climate and he purchased a fruit farm in southern California and combined fruit farming with the practice of medicine. He suffered an exposure while visiting patients that resulted in an attack of pleurisy from which he died March 13, 1884.

PETER N. WOOD, M.D.

Dr. Peter N. Woods of Mt. Pleasant was born in Gremouille, Stark county, Ohio, September 8, 1829. Received his preliminary education at Vermillion Institute, Haysville, Ohio, and the Ohio Wesleyan University, graduated in medicine at Cincinnati June 10, 1854. Practiced at Rome, Ohio, until May, 1856, when he removed to Fair-

field, Iowa. In 1879-80 he was a graduate student in Rush Medical College and received the degree of M.D. from this institution in 1880. In July, 1862, Dr. Woods was commissioned as recruiting officer and in August was detailed as examining surgeon for Jefferson county and in September commissioned surgeon of the 39th Iowa Infantry. In December, he was sent to the front with his regiment and served in the Tennessee campaigns until late in 1864 when he was appointed acting division surgeon on the staff of General Sweeney. In General Sherman's Atlantic campaign, Dr. Woods was placed in charge of the sick and wounded of the 4th Division of the 15th Army Corps. He was at the battle of Altoona and had charge of the hospital at that place, when Sherman marched to the sea. Later, at his own request, he was relieved and joined his regiment at Beaufort. At the close of this service, Dr. Woods was detailed as chief surgeon of Sherman's Provisional Division until it was disbanded at Raleigh, North Carolina in 1865. He was ordered to Washington with his regiment and was finally mustered out at Clinton, Iowa.

Dr. Woods in addition to a large medical practice was also interested in various business enterprises, among the most important was the Fairfield woolen mills of which he was one of the original protectors.

Dr. Woods died March 19, 1886, from pneumonia, at the age of fifty-seven years.

DR. JOHN W. GUSTINE

Dr. John W. Gustine came to Iowa in 1854 and located in Panora where he continued in the practice of medicine until 1875, when on account of failing health, he removed to Carroll, Iowa, where he had large land holdings, intending to give his time to farm interests; but his reputation and experience as a physician rendered it impossible for him to escape certain demands on his time and strength, until in the fall of 1883, he was obliged on account of a progressive tuberculous affection of the lungs to move to Florida, but returned to Carroll where he died October 7, 1885. Dr. Gustine during a considerable portion of his professional life had struggled against pulmonary tuberculosis from which he finally fell a victim.

Dr. John W. Gustine was born in Juniata county, Pennsylvania, September 16, 1822. His father was a man of high standing in the community in which he lived; at one time was a member of Congress from his district.

Dr. Gustine commenced the study of medicine in the office of Dr. H. C. Wood of Philadelphia and graduated from the University of Pennsyl-

vania in 1848. He located first in Pittsburg, Pennsylvania. In 1854 he came to Iowa and located in Panora. He became a member of the Iowa State Medical Society in 1868. In 1871 he was elected treasurer, which position he held until 1877.

Dr. Gustine with a group of active members, notably Drs. Thrall and Williamson of Ottumwa, J. W. Smith of Charles City, A. G. Field of Des Moines, and Wm. Watson, assumed in large measure direction of the affairs of the Iowa State Medical Society. There were at that time two medical college factions—Iowa City and Keokuk—usually antagonistic, but if one or both assumed to control the Society then the above group made any combination to defeat the schools.

Physicians who located in Iowa, particularly in Central Iowa between 1850 and 1860 were real pioneers. The obligations of a practicing physician carried him to the homes of the sick and injured in all conditions of weather and roads; the greatest trial being the roads. In early times people lived widely apart and often at a great distance from the physician's office.

The first white men to settle in Boone county was in 1842, when two men connected with Captain Nathan Boone's expedition in 1832 to explore the Des Moines and Boone river valleys, returned and made claims near the present site of Moingona, but on account of the danger from Indians they soon abandoned their claims. The next white man to settle in Boone county was Charles G. Gaston another member of Captain Boone's Company who located at a place known as Elk Rapids in 1846. Soon after came John Peo, James Hull, J. M. Crooks and others. In 1854, or eight years after the first real settlement of the county, came Dr. P. S. Moser to practice medicine. Dr. Moser, the only son of Dr. Phillip Moser of Charleston, South Carolina, was born in Charleston, July, 1829. He graduated from the University of Pennsylvania in 1852, commenced practice in Muscatine, the same year, and moved to Boonesboro in March, 1854, where he continued in the practice of his profession until his death, September 26, 1894.

Dr. Moser was a dignified professional gentleman of the old school, and in his customary dress of black broadcloth clothes, Prince Albert coat, silk hat and polished boots, was an apparently incongruous figure in a settlement eight years old, and more than 200 miles from a railroad, with a radius in which to practice of twenty-five to fifty miles over roads difficult to imagine. If any commented on Dr. Moser's dress or manners

such comments were carefully guarded for woe unto him who took liberties with Dr. Moser. For many years he was called far and near in difficult and dangerous cases, so great was his reputation as a physician and surgeon. We have a record of 105 capital operations to his credit. Dr. Moser had the spirit and courage of the typical South Carolinian, indifferent and careless as to business or money, courteous, loyal and true, and a failure as measured by the money standards of a Northerner.

Dr. Moser was the first president of the Central District Medical Society organized at Boone in June, 1874. He was a member of Iowa State Medical Society in 1883 but on account of his disregard of money and of business affairs his membership was irregular, he only paid his dues when he attended the meetings and his membership lapsed in the interval.

Dr. C. H. Lothrop graduated from the University of New York in 1858 and located in Lyons, Iowa, the same year. In 1861 he was appointed assistant surgeon of the First Iowa Cavalry and soon after full surgeon, in which position he served to the close of the war. His health failed and he retired from practice. Dr. Lothrop contributed several notable papers to medical literature. His most important contribution was a medical directory of Iowa which was issued in 1876. This was the first directory published of Iowa physicians.

Dr. T. J. Caldwell was an early settler in Dallas county removing there in 1853. Began the study of medicine in 1856 and graduated from the College of Physicians and Surgeons, Keokuk (State University), in 1861. In 1862 Dr. Caldwell was appointed by Governor Kirkwood examining surgeon of the militia of the county. In 1864 he was appointed assistant surgeon 23rd Iowa Volunteer Infantry which position he held until the close of the Civil War. Dr. Caldwell was not only prominent in professional activities but also in politics. He was elected president of the Iowa State Medical Society in 1881. In local and in state politics he exercised considerable influence. He was at one time state senator from Dallas county. Dr. Caldwell was not one of the builders of the Iowa Commonwealth but was active in establishing a condition of permanency and contributed to good citizenship; he was an honored and self-respecting physician and gentleman, active in medical organizations and an earnest worker in his profession. He was of striking personal address, courteous at all times, and in dress, manner and personal dignity the type of the old school physician.

Dr. M. B. Maulsby, the first president of Dallas County Medical Society, was born in Wayne county, Indiana, in 1817; attended one course of lectures at Ohio Medical College in 1842, practiced in his native county until 1854 when he removed to Dallas county.

Dr. E. Van Fossen, a graduate of Rush Medical College, located in Adel in 1852 where he practiced four years, served one term in the Iowa legislature when he retired from the practice of medicine to become a farmer.

NEW EDITOR OF THE NEW YORK MEDICAL JOURNAL AND MEDICAL RECORD

Dr. Stragnell came originally from Colorado, having begun his academic studies at the University of Denver. He graduated from the College of Physicians and Surgeons, Columbia University, and continued his studies in Paris, Vienna and Zurich, specializing in neurology and psychopathology. At the beginning of the world war he volunteered his services to the allied armies and saw service on many fronts for a period of over three years. In the course of hostilities he was twice wounded and in 1915 was taken prisoner. He was finally exchanged through Switzerland and again resumed active service. Finally he was put in charge of two large French hospitals, where he served until the close of the war. At present he is one of the collaborating editors of the Journal of Nervous and Mental Disease and a frequent contributor to journals like the Psychoanalytic Review on special psychopathological subjects.

AMERICAN SOCIAL HYGIENE ASSOCIATION

Among the difficulties attending venereal disease clinics is the duplicity often practiced by the patients. There have been instances when in-patients of a hospital, given several days a week off, used that time to go to the dispensary and request treatment there. They are in-patients in the hospital and at the same time out-patients of the clinic. Other patients have a tendency to change from one clinic to another, according to their whims or fancies. Some patients change because they take a personal dislike to some attendant or doctor; others, because the treatments are painful. These practices are a great hindrance to the clinic doctors. Doctors are not given any idea of the number of previous treatments the patient has had. They have no idea of the procedure of the previous treatment, nor of the specific drug used. It is of the greatest importance, therefore, that the administration of the clinic be as smooth as possible, lessening the "rub" between patient and clinic personnel.—From The Report by the Medical Officer of Health on the Venereal Diseases Scheme, 1921, of the London County Council.

THE AMERICAN SOCIETY FOR THE CONTROL OF CANCER

Dr. D. S. Fairchild, Editor,
Iowa State Medical Society Journal.

The last year has seen a most encouraging volume of interest in the cancer problem.

We think this due in no small part to the 1921 National Cancer Week held last fall, and the success of that week was largely due, without doubt, to the whole-hearted interest which the American Society for the Control of Cancer received from the authoritative medical and surgical journals of the country and the medical writers constantly contributing to professional periodicals and to the lay press.

At that time, you will remember, it was thought that one could detect evidences of the cancer curve having reached its crest; but since then another increase is noted, the rate for 1920 being 83.4, having risen from 63 per 100,000 population in 1900.

In several states it is reported that mortality from cancer has passed that for tuberculosis and in 1920 for the whole registration area there were more deaths from cancer than from tuberculosis in those thirty years of age and over.

How can we hope to hold this disease within reasonable bounds? It is conceded that there is at present but one hope—more education—education of the laymen with reference to symptoms and to the groundless fear of the disease and of an operation; and education of the physician to a point where he will no longer temporize but will act immediately and intelligently upon every danger signal which might suggest cancer.

This then the challenge. This the reason, even in the face of the possible cry of "Repetition," that the American Society for the Control of Cancer has set the week of November 12-18 for a second "National Cancer Week," and is now calling once again for all medical journals and medical writers to stand by and push.

Two outstanding contributions were made to the campaign last year (1) the carrying of announcements of the campaign and the urging of all medical men to take part; and (2) the preparation by several authoritative medical writers associated with syndicates of a daily cancer article for their columns during that "week." Some excellent symposiums were also carried by the medical and surgical journals. All of these methods are to be encouraged and the society earnestly requests that all suitable publicity be given the campaign and that instructive material be disseminated both in the professional and lay press to the end that everybody may become intelligently informed with reference to cancer and the movement for its control.

Anticipating your continuing cooperation, I am,

Sincerely yours,

F. J. OSBORNE,
Executive Secretary.

The Journal of the Iowa State Medical Society

D. S. FAIRCHILD, Editor.....Clinton, Iowa

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MEDICAL EDUCATION

The Journal A. M. A. for August 19, 1922, presents an extremely interesting editorial report of the work accomplished in twenty-two years in advancing medical education. The Journal with its editor have been the important factors in bringing about the conditions laid before the profession in the editorial referred to. There have been other influences at work, even before the Journal was publishing its statistics in 1901, but the exceedingly low state of medical education in the United States had not been appreciated until that date. Many members of the medical profession understood the situation and deplored the fact that our medical schools were far behind other countries in the kind of medical education furnished but no one seemed to know how the difficulty could be remedied. The medical schools themselves desired better things but were in constant fear of loss of students and consequent financial difficulties if the standards were raised. This of course applied to the better and more progressive schools. It only needed concerted action to bring about a reform and it was reserved for the Journal A. M. A. to point out the way to accomplish what so many desired, which it did in the editorials published in 1901. It was not, however, until 1904 that the matter found lodgment in the minds of the medical public to fix the responsibility for the unfortunate state of affairs and the fact was then realized that one of the purposes of the organization of

the medical profession in the American Medical Association was the improvement of medical education. Therefore, in 1904 the council on medical education was formed. "In 1906 the council made its first tour of inspection of all medical schools, and in 1907 the first classification was prepared." Much opposition was expressed and many bitter things were said, but the Journal and the council consistently and persistently pressed the need of reform until the schools of medicine in the United States became equal to best of all countries. The work is not closed. Having reached the present high state of efficiency it remains for the council on medical education to work out and adjust some of the defects which will bring medical education into accord with the changing conditions of medical practice both as to the needs of the public and the profession itself. The August 19th editorial should be read by every physician as a matter of information.

The Illinois Medical Journal comforts itself in the belief that the Illinois delegation in the House of Delegates of the American Medical Association has averted a most disastrous catastrophe that threatened to enslave the American Medical profession through the operation of state medicine. We are willing to accord the Illinois profession its full share. But it must be remembered that the state relation to the practice of medicine was a problem that grew out of a badly dislocated state of medical practice both as relates to the profession and the public.

It will not be resolutions by medical societies that will solve economic problems relating to the practice of medicine but the manner in which the great body of medical practitioners meet the problems confronting them. There was a time when the public felt that the money spent by the state and by private munificence on medical education did not bring adequate results; that the medical profession had led themselves to believe that the large sums expended were for their personal benefit; that this money was their own rightful asset and that no one should ask for an accounting; furthermore, not a few apparently believed that with this equipment it was their right and privilege to exploit the public as suited their personal interests. This belief became so widespread among the people that state medicine in some form was threatened, and some men of wide vision in the medical profession for a time had come to the belief that this was the only way out of the difficulty. The heated discussion which followed convinced many that it would be unfortunate to have the state come in to

solve problems that the profession itself should solve them and the public began to see the matter in the same light and are now inclined to leave the problem to the organized profession, with some doubts apparently, as may be noted in articles which from time to time appear in the lay press. In the medical press there are editorials, and in some prepared papers indications appear that the public has no business with our affairs but as a rule the medical journals take the view that the public has a right to inquire into use the profession is making of the liberal supply of money granted for medical college equipment. No good can possibly arise from bitter denunciations of men who saw the danger early, men who knew that if the profession persisted in defying the public that legislation would surely come in a way least to be desired. From our point of view the address delivered at the St. Louis meeting by Dr. de Schweinitz will contribute vastly more to convince the interested public of our intentions than the resolutions passed by the House of Delegates, as the Illinois Medical Journal insists at the instigation of the Illinois Delegates, which we presume will never be read or remembered. We are now in a fair way to work out our problems without the aid of legislatures.

THE NATIONAL BOARD OF MEDICAL EXAMINERS

The National Board of Medical Examiners has just completed the first five years' work and with it the trial period of its usefulness. The principle which this board has stood for, namely, the establishment of a thorough test of fitness to practice medicine which might safely be accepted throughout this country and abroad, has been widely accepted. Since this board was organized by Dr. W. L. Rodman, in 1915, eleven examinations have been held. These examinations have been conducted on the plan of holding at one sitting, a written practical and clinical test for candidates with certain qualifications, namely a four-year high-school course, two years of college work, including one year of physics, chemistry, and biology, graduation from a Class A medical school and one year's internship in an acceptable hospital. These examinations have covered all the subjects of the medical school curriculum and have been conducted by members of the board with members of the profession resident in the place of examination appointed to help them. Such examinations have been held in Washington, Philadelphia, New York City, Boston, Chicago, St. Louis, Rochester (Minnesota), and

Minneapolis. During the war a combined examination was held at Fort Oglethorpe and Fort Riley. There have been 325 candidates examined, of whom 269 have passed and been granted certificates.

Starting with the endorsement of the Council of Medical Education of the American Medical Association, American Medical College Association and various sectional medical societies, the recognition of the army, navy and public health service medical corps, of the United States, and certain state board of medical examiners, the certificate is now recognized. Also by twenty states as follows: Alabama, Arizona, Colorado, Delaware, Florida, Georgia, Idaho, Iowa, Kentucky, Maryland, Minnesota, Nebraska, New Hampshire, New Jersey, North Carolina, North Dakota, Pennsylvania, Rhode Island, Vermont and Virginia, the Conjoint Board of England, the Triple Qualification Board of Scotland, the American College of Surgeons, and the Mayo Foundation of the University of Minnesota.

There has been such a widespread demand for an opportunity to secure this certificate by examination, that the board has now adopted and will put into effect at once, the following plan: Part I, to consist of a written examination in the six fundamental medical sciences: Anatomy, including histology and embryology; physiology; physiologic chemistry; general pathology; bacteriology; materia medica and pharmacology. Part II, to consist of a written examination in the four following subjects: Medicine, including pediatrics, neuropsychiatry and therapeutics; surgery, including applied anatomy, surgical pathology and surgical specialties; obstetrics and gynecology; public health, including hygiene and medical jurisprudence. Part III, to consist of a practical examination in each of the following four subjects; clinical medicine, including medical pathology, applied physiology, clinical chemistry, clinical microscopy and dermatology; clinical surgery, including applied anatomy, surgical pathology, operative surgery, and the surgical specialties of the diseases of the eye, ear, nose and throat; obstetrics and gynecology; public health including sanitary bacteriology and the communicable diseases.

Parts I and II will be conducted as written examination in Class A medical schools and Part III will be entirely practical and clinical. In order to facilitate the carrying out of Part III, subsidiary boards will be appointed in the following cities, Boston, New York, Philadelphia, Minneapolis, Iowa City, San Francisco, Denver, New Orleans, Baltimore, Galveston, Cleveland, St.

Louis, Chicago, Washington, D. C., and Nashville and these boards will function under the direction of the national board. The fee of \$25 for the first part, \$25 for the second part and \$50 for the third part will be charged. In order to help the board the Carnegie Foundation has appropriated \$10,000 over a period of five years.

At the annual meeting held June 13, of last year in Boston, the following officers were elected, M. W. Ireland, surgeon general, president; J. S. Rodman, M.D., secretary-treasurer, E. S. Elwood, managing director.

Mr. Elwood will personally visit all Class A schools during the college year to further explain the examination, etc., to those interested. Further information may be had from the secretary-treasurer, Medical Arts Building, Philadelphia.

HYPERSENSITIVENESS TO FOODS AS CAUSE FOR ABDOMINAL PAIN

The Journal of Laboratory and Clinical Research abstracts a paper by Dr. Duke from the Archives of Internal Medicine of which we reproduce a part which seems to be of unusual interest to the practicing physician.

"Severe abdominal pain, says Duke, is a symptom which is never taken lightly by a careful physician. It often indicates a severe illness; in fact it often indicates an emergency. But, says Duke, there are cases in which abdominal pain may simulate that arising in serious abdominal disease, but which is the result of hypersensitiveness to food. It has been known for a number of years that hypersensitiveness to foods may give rise to bronchial asthma and a condition which simulates hay fever; to urticaris, angioneurotic edema, purpura, eczema, and other dermatoses; to dyspepsia, gastrointestinal upsets associated with vomiting, diarrhea, griping pains in the abdomen, and mucous colitis; to an interesting syndrome of symptoms known as Henoch's purpura. With the latter conditions a patient may have severe abdominal pain.

"But abnormal pain sometimes occurs alone and is the sole striking symptom of hypersensitiveness to a food. In such cases the symptoms may be misleading in diagnosis. It is such cases that Duke discusses. He has observed a number of patients who have been sensitive to one or more of the following foods: egg white, egg yolk, shad roe, lactalbumin, casein, beef, pork, honey, strawberries, lettuce, almonds, beans, onions, cabbage, rice, potatoes, tomatoes, paprika and pimento, and who have invariably had an attack of abdominal pain whenever they have eaten the foods to which they were sensitive. In the majority of cases pain appeared soon after ingestion of the food and lasted for three to six hours. In several cases it did not appear until several hours later and then it lasted much longer.

In the majority of cases pain was associated with nausea and vomiting, less frequently with indigestion, bloating, diarrhea and mucous stools, and much less frequently with hives, angioneurotic edema and purpura."

JOHN McCRAE, M.D.—IN MEMORIAM*

In Northern Gaul sleeps John McCrae,
A Celt united to the clay,
Of that great race; away on high
The spheres make music in the sky
As when a Cæsar had full sway.

Rare soldier bard! thy manner gay
Was wont to change to wistful lay,
When war with Hell did seek to vie,
In Northern Gaul.

Above thy cross let sunlight ray,
And song of lark, throughout the day,
Thy requiem be; let us not sigh,
Almighty God knows all who lie,
Who won or lost in dreadful fray
In Northern Gaul.

E. J. Mullally.

*On a day in the latter part of July, 1914, at the luncheon table of the Royal Victoria Hospital, Montreal, John McCrae interested a group, among whom was the writer, by relating some of his experiences as an artillery officer in the South African war; he had arranged for transportation to Europe and was gaily recounting some of the places he intended to visit during his forthcoming holiday. While on the ocean the Great War broke out; the harrowing experiences he went through at the front, in the early days of the Canadian participation in that momentous struggle most probably helped in lowering his resistance to the pneumonic infection which caused his death in January, 1918, when his fame as the author of the poem "In Flanders Fields" was international. His body is buried in the cemetery in Wimereux near Boulogne in northern France.—The Canadian Medical Association Journal.

The Magnuson X-Ray Company of Omaha presented a special course in x-ray and physio-therapeutics, December 11 to 16. Physicians from eight states were in attendance. Many leading Omaha and Nebraska doctors as well as a number from Iowa were on the program—and a number of instructive clinics were held—all showing results of x-ray technic in the treatment of various cases. As an outcome of this meeting, The Interstate Society of Radiology and Physio-Therapeutics was organized with Dr. C. L. Mullen, Broken Bow, Nebraska, president, and Dr. T. T. Harris, Omaha, secretary. Much appreciation of the efforts of the Magnuson Company in arranging the course was expressed by the doctors in attendance.

HUMAN ACTINOMYCOSIS

To the Editor: I am endeavoring to make a complete study of the distribution of human actinomycosis in this country. The number of cases reported in the literature is surprisingly small, and I know that the disease is not so rare as is sometimes thought. I shall greatly appreciate hearing directly from any one who has had experience with this disease, and desire to know concerning case histories the following: age, sex, occupation, residence, state in which the disease was contracted, location of lesion, duration of symptoms, and any special points of interest connected with the treatment, outcome of the disease, or necropsy findings.

A. H. Sanford, M.D., Mayo Clinic,
Rochester, Minnesota.

IOWA STATE UNIVERSITY NEWS NOTES

Don M. Griswold, M.D.

A contract of over \$170,000 has been awarded by the State Board of Control of Iowa, for a big modern addition, for the state sanitarium at Oakdale, the appropriation for which was made at the last General Assembly in Des Moines.

Dr. E. B. Fulliam, Jr., now located at Muscatine, has been appointed assistant collaborating epidemiologist of the United States Public Health Service by Dr. Hugh S. Cumming, surgeon general of the United States Public Health Service.

By an order of the United States Secretary of War, Weeks, dated June 27, 1922, the Medical Department of the State University of Iowa has been made a hospital unit of the Medical Reserve Corps of the United States Army. Two of these units have been assigned, up to the present time, by the Federal Government: one at the Massachusetts General Hospital in Boston, and the other at the State University Hospital in Iowa City. According to this order, the University Hospital is made a General Hospital Unit Number 54 of the U. S. Medical Corps. It is to have an active personnel of 472, including forty officers and 120 nurses and an equipment of 1000 beds. The personnel, although not officially appointed as yet, will be composed of members of the present staff of the Medical College and in case of war, medical students will probably receive commissions. This unit is to be an actual part of the United States Army, and is to be ready for immediate action in case of need.

Dr. Max E. Witte who has been doing intensive study in the neurological service of the Boston City Hospital in Boston this past year and the Boston Psychopathic Hospital the year before, was married a short time ago. He intends to return to Iowa to practice.

A Fellowship in Neuropathology at the Psychopathic Hospital of the State University of Iowa has been awarded to Dr. Vernon Cone by the National Research Council.

Miss Corvin of Smith College, Northampton, Massachusetts, has assumed her active duties as assistant to the social worker at the Psychopathic Hospital at the State University of Iowa.

Dr. A. H. Byfield, professor of pediatrics of the State University of Iowa, left October 23 to attend a health exposition in Oregon. At this exposition held from October 26 to November 4, Dr. Byfield gave problems on "The Clinical Significance of Chronic Respiratory Infections in Children," and "Practical Aspects of Recent Nutritional Investigations."

At a meeting of the Central Neuro-Psychiatric Society in October, in Rochester, Minnesota, Dr. L. G. Lowrey, assistant director of the Psychopathic Hospital of the State University of Iowa was elected vice-president of the society.

Dr. Arthur Steindler, professor of orthopedic surgery of the State University of Iowa, gave an address on "Construction Work on the Upper Extremity," at the Tri-state meeting at Peoria November 1, 1922.

Dr. Charles E. Mayo of Rochester, Minnesota, famous surgeon, declared in an address before the Virginia Medical Society that "the prevalent indifference of citizens of higher intelligence toward government is giving this country over to those of lower intelligence, thereby establishing a dangerous situation."

Dr. Mayo, as those who know him are aware, is not a haughty, aristocratic spokesman for what constitutes a class or a caste in some lands and is called, in Russia, "intelligentsia." He does not believe in class rule or class consciousness. He is stating a fact which must be taken into consideration by Americans if they would preserve their government unimpaired.

There is no question but most of us will agree that intelligence is essential in good government. We may not all agree as to what constitutes intelligence, and Dr. Mayo did not see fit, apparently, to offer his definition of the term. But he indicates clearly that, in his opinion, there is a deplorable lack of interest in government on the part of those who by education and experience are best fitted to exercise the rights and meet the obligations of the elector.

Those who make it a practice to labor at the job of getting out the vote in campaigns know that the ignorant, uninformed or vicious voter never has to be invited to visit the polls. They know also that the greatest effort is required to induce an alarmingly large proportion of the so-called "good citizens" to vote. In many instances, when they do cast their ballots, these same citizens do so in hit-or-miss fashion and without giving the election, the issues or the candidates more than a passing, casual thought. They may be intelligent with reference to some subjects, but they are not intelligent as to politics. If they were they would know that their highest duty has to do with the discharge of the obligation of the elector; they would devote time to politics in proportion to government's importance.—Ottumwa Courier.

UNITED STATES VETERANS BUREAU

The Editor,
Journal of the Iowa State Medical Society.
My Dear Sir:

This Bureau is charged with the responsibility of furnishing medical care and treatment to veterans of the World War. We find ourselves handicapped by a very serious shortage of physicians and nurses trained in neuropsychiatric work. The need has become so urgent that the director has decided to make an endeavor to give special instruction to selected doctors and nurses for the purpose of supplying our needs in hospitals and dispensaries.

I am enclosing an announcement on the subject which is self-explanatory.

Dr. Frank F. Hutchins, professor of mental and nervous diseases, University of Indiana, and the director of clinical neuropsychiatry, U. S. Veterans' Bureau, is in direct charge of these courses and any reply that you care to send should be forwarded to this office for his attention.

It has occurred to me that you might assist the Bureau to bring this matter to the notice of your readers, by publishing such extracts or portions of the announcement as you may deem necessary and convenient.

Your favorable action will be appreciated. If you make any announcement in your publication, will you kindly forward a copy for our information.

The Bureau will appreciate your cooperation in an endeavor to provide the best care for the men and women who served our country in its hour of need.

Very sincerely ours,
ROBT. U. PATTERSON,
Asst. Dir., U. S. Veterans' Bureau.

The United States Veterans' Bureau offers a special course in neuropsychiatry to a certain number of qualified physicians on condition that upon completion of such course they will continue in the service of the Bureau for a period of at least two years thereafter.

The policy of this Bureau is to provide expert medical attention for the disabled veterans so that everything possible may be done to restore them to health and proper status in civilian life. To maintain this policy in the opening up of new hospitals, and being unable to secure the required number of specialists in nervous and mental disease, it becomes necessary to instruct a staff of our own for this line of work. To this end a systematic and comprehensive course in neuropsychiatry has been carefully outlined consisting of 176 lectures and demonstrations and some 440 hours of clinical and laboratory work. Each course will be for a period of about four months. There will probably not be more than two courses annually. Courses will be offered as long as it appears necessary in order to meet Bureau requirements. Instruction will include the necessary

reviews of the fundamentals, followed by clinics and lectures on the various forms of nervous and mental diseases, including endocrinology. Special attention will be devoted to diagnostic methods, the general care of patients, and methods of treatment. Students will have actual experience in practical work. General problems of hospital administration, medico-legal questions, rehabilitation methods, psychometric examinations and other related matters will be adequately dealt with.

The main part of this course will be given at St. Elizabeths Hospital, a government institution for the insane at Washington, D. C., which offers unusual and unexcelled facilities for such work. There are nearly 4,000 patients and case histories of more than 20,000 discharged patients immediately available for study. Here are all classes of nervous and psychotic diseases, while other public hospitals in Washington will provide abundant clinics in so-called functional diseases, borderline cases, and the milder types.

The teaching staff that has been selected to give this course in neuropsychiatry is significant. Besides the members of the staff at St. Elizabeths there will be lecturers from the medical departments of the army, the navy, the public health service, the United States Veterans' Bureau and the U. S. Department of Agriculture. A number of America's most eminent neurologists and psychiatrists will come to deliver lectures on special topics.

As the number of students that can be accommodated is limited, early application for each course is desirable.

The following is a partial list of the special lectures that will be given:

Lecturers in Course on Neuropsychiatry for Student Officers of the Veterans' Bureau

Dr. George S. Amsden: Physician, Bloomingdale Hospital, White Plains, N. Y.—The Study of the Personality.

Dr. C. S. J. Butler: Commander, Medical Corps, U. S. N., In Charge, Naval Medical School; Professor of Tropical Medicine at George Washington University, Washington, D. C.—Nervous and Mental Symptoms in Some Tropical Diseases.

Dr. Walter B. Cannon: Professor of Physiology, Harvard University, Boston, Massachusetts—Emotions from a Physiological Point of View.

Dr. L. Pierce Clark: Consulting Neurologist to Craig Colony for Epileptics, New York, N. Y.—The Epilepsies—Differentiation and Treatment.

Judge R. W. Cooley: Special Legal Advisor, Veterans' Bureau, Professor of Law, American University, Washington, D. C.—Medico-Legal Problems in the Hospital Work of the Veterans' Bureau.

Dr. C. B. Davenport: Director, Station for Experimental Evolution of Carnegie Institution, Cold Spring Harbor, N. Y.—Heredity in Neuropsychiatric Conditions.

Dr. S. I. Franz: Director of Laboratories, St. Elizabeths Hospital; Professor of Experimental Psychology, George Washington University, Editor of

Psychological Bulletin, Washington, D. C.—The Functions of the Nervous System.

Dr. Joseph Goldberger: Surgeon, U. S. Public Health Service, Washington, D. C.—Nervous and Mental Concomitants in Pellagra.

Dr. E. Hackinson: Lieutenant Commander, U. S. Navy, Naval Hospital, Washington, D. C.—Physiotherapeutic Methods.

Dr. C. Judson Herrick: Professor of Neurology, University of Chicago, Editor of Journal of Comparative Neurology, Chicago, Illinois—Neuroanatomy.

Dr. Frank F. Hutchins: Professor of Mental and Nervous Diseases, University of Indiana; Specialist in Neuropsychiatry, Veterans' Bureau, Washington, D. C.—Neurological Examination Methods.

Dr. Smith Ely Jelliffe: Editor of psychoanalytic Review, Managing Editor of Journal of Nervous and Mental Diseases, New York, N. Y.—Multiple Sclerosis—Diagnosis and Treatment.

Dr. Harry H. Kerr: Professor of Neurological Surgery, George Washington University, Washington, D. C.—Peripheral Nerve Lesions—Surgery and Other Therapeutic Measures.

Dr. R. F. Longacre: Major, Medical Corps, U. S. A., Flight Surgeons School, Mineola, Long Island, New York—Barany and Rotation Tests—Methods and Interpretations.

Dr. R. W. Lovett: Professor of Orthopedic Surgery, Harvard University, Boston, Massachusetts—Poliomyelitis Therapy.

Dr. Adolph Meyer: Director, Phipps Psychiatric Institute, Professor of Psychiatry, Johns Hopkins University, Baltimore, Md.—Topics in Psychiatry.

Dr. H. J. Nichols: Major, Medical Corps, U. S. A. (Formerly of the Army Medical School) New York, N. Y.—Methods and Meaning of Serological Examinations.

Dr. T. W. Salmon: Medical Director, National Committee for Mental Hygiene; Professor of Psychiatry, Columbia University, New York, N. Y.—Statistics and General Problems in Neuropsychiatry.

Brig. Gen. Chas. E. Sawyer: Personal Physician to the White House, Director, White Oak Farm Sanatorium, Marion, Ohio—Practical Methods in Neuropsychiatry.

Dr. E. W. Schwartze: In Charge Pharmacological Laboratory, Bureau of Chemistry, U. S. Department of Agriculture, Washington, D. C.—The Chemistry of the Nervous System.

Dr. H. W. Smith: Commander, Medical Corps, U. S. N., Washington, D. C.—Possibilities of Roentgenology in Neurology.

Dr. H. C. Solomon: Chief of Therapeutic Research, Boston Psychopathic Hospital, Boston, Massachusetts—Neurosyphilitic Conditions; Diagnosis and Treatment.

Dr. M. X. Sullivan: Pharmacological Director Hygienic Laboratory, U. S. Public Health Service, Washington, D. C.—Metabolism Findings in Neuropsychiatric Conditions.

Dr. Frederick Tilney: Professor of Neurology,

Columbia University, New York, N. Y.—Topics in Neurology.

Dr. E. L. Thorndike: Professor of Educational Psychology, Teachers' College, Columbia University, New York, N. Y.—Testing for Intelligence and Special Aptitudes.

Dr. Walter B. Timmie: New York, N. Y.—Endocrine Disorders.

Dr. J. B. Watson: Editor of Journal of Experimental Psychology; formerly Professor of Psychology, Johns Hopkins University, New York, N. Y.—Behavioristic Viewpoint and Explanation of Psychoses.

Dr. T. H. Weisenburg: Professor of Nervous Diseases, University of Pennsylvania; Editor of Archives of Neurology and Psychiatry, Philadelphia, Pennsylvania—Cerebellar Syndromes and Therapy.

Dr. E. P. Wheery: In Charge Crop Chemistry Laboratory, Bureau of Chemistry, Department of Agriculture, Washington, D. C.—Medical Aspects of Hydrogen-ion Concentration Work.

Dr. S. A. White: Major, Medical Corps, U. S. A., Army Medical School, Washington, D. C.—Methods and Interpretations of Metabolism Examinations.

Dr. W. A. White: Superintendent, St. Elizabeths Hospital, Professor of Psychiatry, George Washington and Georgetown Medical Schools; Lecturer, Army and Navy Medical Schools; Editor of Psychoanalytic Review, Washington, D. C.—Topics in Psychiatry.

Other Instructors from the Staff of St. Elizabeths Hospital, Washington, D. C.—Topics in Neurology, Psychiatry, Psychotherapy, Etc.

Physicians who desire to enter the service of the U. S. Veterans' Bureau and to take this course in Neuro-Psychiatry are requested to make application at once to the director of the U. S. Veterans' Bureau, attention Medical Division, including thereon the information, and where necessary the documents, mentioned in the following list of qualifications:

1. Applicant must be a citizen of the United States.
2. Must be between twenty-three and forty-five years of age.
3. Must be a graduate of a Class "A" Medical School with at least six months' service as interne in a general hospital or its equivalent.
4. Must present a certificate from the dean of his medical school as to his professional ability, his personal suitability, and his moral character.
5. Must be able to show by recent medical examination certificate that he is in good health and physically fit.
6. Must sign a statement that he will give at least two years' professional service to disabled veterans after completion of the course.
7. Must submit with his application a recent photograph of himself.

Ex-service men who have been honorably discharged will be given preference.

Other things being equal, members for the course will be selected in the order of their application.

Students who are authorized to take the course who are not already in the employ of the Veterans' Bureau will receive a salary of \$166 per month, with no allowances, while taking the course.

On satisfactory completion of the course members will be recommended for the grade of passed assistant surgeon in the Reserve Corps of the U. S. Public Health Service, or they will become eligible for employment as Class "B" physicians under the U. S. Civil Service Commission and assignment to duty with the U. S. Veterans' Bureau. These salaries range from \$3,000 per year, upward.

The course will start on January 4, 1923.

T. H. SCOTT,
Acting Director.

SOCIETY PROCEEDINGS

Boone County Medical Society

The Boone County Medical Society met recently in the Chamber of Commerce rooms.

O. V. R. Smith, lecturer for Parke Davis and Company gave an illustrated lecture on Antitoxines with Dr. L. A. Bassett in charge of the slides.

Aside from the members of the society the nurses of the city were present.

Buchanan County Medical Society

A meeting of the Buchanan County Medical Society was held in the Commercial Club room October 25. Papers were read by Drs. Hunt, of Hazleton, and Murphy of Winthrop. Other out of town physicians in attendance were Drs. Donnell of Hazleton, Ward, of Brandon and Johnson of Quasqueton.

Calhoun County Medical Association

The members of the Calhoun County Medical Association were entertained at a six o'clock dinner at the home of Dr. Henry Young at Manson, celebrating the fiftieth anniversary of Dr. Young's practice of medicine in Calhoun county, he being the pioneer physician of the county. The following talks were a part of the program: "The Legislature," Dr. D. J. Townsend of Lohrville; "The Country Doctor," by Dr. C. J. Saunders of Fort Dodge, and "Events in the Time of a Pioneer Doctor," by Dr. E. S. Souder of Rockwell City and Dr. Kauffman of Lake City.

Clinton County Medical Society

The annual meeting of Clinton County Medical Society was held December 19 at Clinton at which time J. C. Langan was elected president, and H. R. Sugg, secretary.

Hancock-Winnebagos Medical Society

The regular quarterly meeting of the Hancock-Winnebagos Medical Society was held at the Legion rooms October 25. There were about eighteen or twenty doctors from these two counties, including

Dr. Beeh, Dr. Chase and Dr. Russell, of Fort Dodge; Dr. M. J. Kenefick and Dr. E. C. Hartman of Algona.

Dr. Beeh and Dr. Chase read papers on surgery and diseases of the eye, nose and throat, and other topics were discussed pertaining to the profession.

After the meeting the four local doctors entertained the visitors at an informal luncheon at the S. & S. cafe at 5:30.

Their next meeting is scheduled to take place at Garner sometime in the month of January, 1923. They have been meeting irregularly for a few years and are now trying to get to going in full swing again.

Hardin County Medical Society

The semi-annual meeting of the Hardin County Medical Society was held at Eldora. Drs. Bloomfield and Greenfield of Chicago and Dr. Davis of Iowa City gave addresses in the afternoon. At the annual election of officers for the year Dr. C. C. Cady of Alden was elected president; Dr. R. R. Gaard of Radcliffe, vice-president; Dr. W. E. Marsh, Eldora, re-elected secretary, and Dr. C. M. Wray, Iowa Falls, treasurer. The next meeting will be held at Alden in the spring.

Johnson County Medical Society

At the meeting of the Johnson County Medical Society held at the State Psychopathic Hospital, December 13, a neuropathological demonstration was given by S. T. Orton, director, and his assistant, L. G. Lowrey, gave a clinic illustrating various types of cases.

F. J. Rohner was elected president; J. C. Kessler, vice-president; A. W. Bennett, secretary-treasurer, and H. J. Prentiss and W. F. Boiler, delegates.

Marion County Medical Society

At the annual meeting of the Marion County Medical Society held at Knoxville December 21, the following officers were elected: Roy Moon, Attica, president; C. S. Cornell, Knoxville, vice-president; J. R. Wright, Knoxville, secretary-treasurer; E. C. McClure and H. L. Bridgeman, delegates.

Marshall County Medical Society

Marshall County Medical Society recently gave its approval to the contract entered into for the medical society with the board of supervisors for treating poor of the county for \$2,500 a year. As soon as formalities are complied with the contract will be in force and the society will assume the responsibility for treating such cases.

Details were discussed at the monthly meeting of the society following dinner at the Y. M. C. A. The society will incorporate to provide corporate responsibility under the contract and details of the plan for treatment will have to be worked out. In general, the latter detail as it now stands, will be that members of the society will each take turns answering

county case calls for a period of a few weeks at a time.

Dr. J. W. Prentiss of the medical school of the State University, who was here holding a baby clinic, spoke on the Shephard-Towner law, under which the baby clinic was authorized, and what was being accomplished under it in saving babies.

Drs. R. S. Grossman, M. U. Chesire and F. H. Wahrer, discussed phases of the general subject of diseases of the blood and their relation to hemorrhage.

Scott County Medical Society

The Scott County Medical Society at its meeting at the Chamber of Commerce on November 7, 1922, elected the following officers for the year 1923: President, Dr. W. E. Foley; vice-president, Dr. L. E. Shafer; secretary, Dr. W. C. Goenne; treasurer, Dr. S. G. Hands; censor, Dr. B. H. Schmidt.

Dr. Kellogg Speed of Chicago, Illinois, read papers on Appendicitis in Children and Fractures of the Carpal Bones.

Drs. Wm. L. Donnelly and Howard A. Weis were elected to membership in the society.

Closer cooperation with the Davenport Visiting Nurses Association was planned by the adoption of standing orders to be carried out by the nurses on patients seen before the arrival of the physician.

W. E. Foley, Sec'y.

Southeastern Iowa Medical Society

The forty-seventh annual meeting of the Southeastern Iowa Medical Society was held in Burlington October 19. Following is the program:

President's Address—Dr. O. A. Geeseka, Mt. Pleasant.

The Timely Resurrection of Chemotherapy—Dr. W. W. Bailey, Davenport.

Medical Field Activities in Iowa—Dr. F. E. Sampson, Creston.

The Importance of Shock Treatment in Fractures—Dr. Nathaniel Allison, St. Louis.

The Clinical Significance of Chronic Respiratory Infections in Childhood—Dr. Albert H. Byfield, Iowa City.

Early Diagnosis and Treatment of Gastric Cancer—Dr. Frank Smithies, Chicago.

Cancer of the Colon—Dr. F. M. Tombaugh, Burlington.

The Deviated Nasal Septum—Dr. D. F. Huston, Burlington.

Lunch at Hotel Burlington, 12:30 o'clock p. m.

Address—Mr. Paul Augsburg.

Solo—Miss Florence Hood, soprano.

Officers—Dr. O. A. Geeseka, president, Mt. Pleasant; Dr. S. A. Spilman, vice-president, Ottumwa; Dr. Geo. B. Crow, secretary, Burlington.

Censors—Dr. C. F. Wahrer, Fort Madison; Dr. Frank Fuller, Keokuk; Dr. W. C. Fordyce, Fairfield.

Entertainment—Dr. J. N. Patterson and Dr. Geo. H. Steinle, Burlington.

SECTIONAL MEETING AMERICAN X-RAY SOCIETY

The Central Section of the American X-ray Society will hold its mid-winter meeting at Louisville, Kentucky, on Saturday, February 24, 1923, for one day including an evening session. All members of your association are invited and those interested in x-ray work are urged to attend as we feel they will be well repaid for one day's absence from their office.

Officers: E. C. Ernst, St. Louis, Missouri, president; J. T. Murphy, Toledo, Ohio, first vice-president; B. R. Kirklin, Muncie, Indiana, second vice-president; D. Y. Keith, Louisville, Kentucky, secretary.

D. Y. Keith, Louisville,
Sec'y of Central Section.

HOSPITAL NOTES

Mother Mary Cephas, Cedar Rapids, was re-elected president of the Iowa Conference of Catholic Hospital Association.

Sister Mary Benadette, Waterloo, first vice-president; Sister Mary Genevieve, Ottumwa, second vice-president; Sister Mary Philomena, Dubuque, third vice-president, and Sister Mary Aquinas, Davenport, secretary-treasurer.

The Iowa conference is a division of the Catholic Hospital Association of the United States and Canada. The purpose of the association is to promote better care of the sick in Catholic hospitals. The evidence of this improvement is found in hospital standardization. During the past seven years the Catholic Hospital Association, together with the American College of Surgeons, has been engaged in putting the program of standardization into effect in the Catholic hospitals of the country.

The first effort to save Marshalltown babies and reduce infant mortality under the provisions of the Shephard-Towner state law was made at St. Thomas Hospital when Dr. J. W. Prentiss, a specialist in baby diseases, and expert of the extension department of the State University of Iowa, examined eighteen babies at a clinic. This was the first of a series of such clinics Dr. Prentiss will hold here under the auspices of the Visiting Nurses' Association.

Babies of all kinds and colors and from all sorts of homes were brought to the specialist. Some were brought by willing parents, others were there because indifferent or ignorant parents were all but compelled to bring them. This fight for babies is to save the little ones from misfortune and disease as well as from parents who do not know or who do not care.

The nineteenth annual meeting of the Iowa State Association of Graduate Nurses was well attended at Sioux City, October 17 to 20, 1922.

The first day was Red Cross round table conference. The public health nurses field of work was thoroughly discussed. The final decision was reached by all, that the public health was here to stay.

The second, third and fourth days were devoted to hospital management the intelligence test on a basis for entrance for all training schools of nursing. The nursing education from the standpoint of the physician and the private duty nurse. The centralization of training schools for all nurses; contagious diseases, serum and vaccination.

A very interesting paper, "An Equal Chance," was read by Miss Anna Drake, state director of Public Health.

Doctor Richard Olig Beard from the State University of Minnesota gave a very good lecture on "Why the Centralized State Training School for Nurses Was the Best" and that it will not be long before every state in the union will demand a centralized training school for the nurses.

Dr. Beard also discussed public health nursing.

MEDICAL NEWS NOTES

How Do the Doctors Explain This?

It is seven or eight years since the Journal has printed a patent medicine or traveling quack doctor advertisement. We stopped taking that sort of business because we thought the net result of patent medicines and quack doctors is bad for their users, and secondly because we believed they subject conscientious practitioners to unfair competition. It has cost us hundreds of dollars and hasn't produced 50 cents' worth of compensatory business, so far as we know.

Last week we got an American Express Co. money order pinned to a traveling doctor's advertisement to cure rupture. We returned them. Since then we've noticed the same "ad" in both the other American papers in Decorah and in a half dozen other papers in this vicinity. These papers don't lose an "M.D.'s" card or an "M.D.'s" subscription by taking the money of the fakirs who cure rupture without operations, cancers with paste, and consumption with some sweet concoction. And the Journal, so far as we can observe, never has got a doctor's card, a six months' subscription, or an order for 500 envelopes that was traceable to an "M.D.'s" appreciation of our position. Experience like this make one realize that "life's a funny proposition after all."—Decorah Journal.

VIVISECTION

The New York City Federation of Women's Clubs at the Hotel Astor defeated by an overwhelming vote a resolution that dogs be exempted from scientific investigation.

PERSONAL MENTION

Dr. Ruth Wheeler, professor and head of the department of dietetics at the University of Iowa, read a paper on the future of the dietitian before the American Dietetic Association at Washington, D. C. She predicted growing attention to nutrition in hospitals and the practice of medicine.

Dr. Cassius Coldren of La Crosse, Wisconsin, has entered into partnership with his father, Dr. C. M. Coldren. Dr. Cassius Coldren received his A.B. degree from Hillsdale, Michigan, followed by two years of medicine at Ann Arbor, University of Michigan and graduated from the Rush Medical College in Chicago. After his graduation, Dr. Coldren served one year as interne under Webster and Haeny in Chicago, later taking up more work in the University of Minnesota, where he remained one year.

Dr. G. E. Crawford, pioneer physician of Cedar Rapids, medical director of the Cedar Rapids Life Insurance Company, has been chosen delegate from seven states, known as the Dratic group, to the convention of the Associations of Life Insurance Medical Directors held in New York.

Dr. B. L. Cody, who since leaving the army in 1918 has been located in Davenport, has now located in Bettendorf. Dr. Cody is a graduate of Washington University, St. Louis, and the College of Physicians and Surgeons in Chicago. During the war he was located in the base hospital at Camp Dodge. In Bettendorf Dr. Cody will conduct a general practice.

Dr. Eula Eno has left for the Pacific Coast, and will sail from San Francisco on November 16 to China, where she is going as a medical missionary. Dr. Eno goes out under the Methodist Women's Missionary Board. This next year she will be a student at the University of Nanking language school. Dr. Eno is a graduate of Drake University of the class of 1916, where she was very prominent. After leaving Drake she attended the Woman's Medical College at Philadelphia and a medical school in Pittsburgh. Later she did interne work in a Philadelphia hospital. During the past summer Dr. Eno was engaged in special medical work in Brooklyn.

Dr. Julia Hill, Des Moines, who resigned from the Grinnell Clinic and as a laboratory superintendent at the Community Hospital in August, was struck by a car in Des Moines recently and from first reports was thought to be fatally injured. Dr. Hill, a graduate of Grinnell College in 1909, and a daughter of Dr. Gershom Hill, also a graduate of Grinnell and for many years a prominent member of the board of trustees, had just left the alumni banquet at the Hotel Savery and was crossing the street when a car driven by a woman rounded the corner, struck Dr. Hill and crashed into another car at the curb, crushing her between the two cars. She was taken to the Methodist Hospital where she rallied rapidly, and late reports to anxious Grinnell friends have it that she suffered but one fractured rib and is recovering nicely.

Dr. A. A. Rhonalt of Ringsted, has been elected a member of the Hampton Clinic to fill the vacancy in the staff occasioned by the resignation of Dr. H. E. Meyer and will begin his duties at the Lutheran Hospital at the beginning of the new year.

OBITUARY

Dr. George Rea Neff was born in Palestine, Ohio, June 13, 1846. When nine years of age the family moved to the state of Missouri where his early life was spent on a farm. At an early age he entered the Keokuk Medical College from which he graduated in 1870 at the age of twenty-four years.

April 17, 1870, he was married to Georgianna E. Anderson. He commenced the practice of medicine in 1870, and has engaged in this profession until Tuesday, September 26. His medical practice covered a period of fifty-two years, twelve of which were spent at Athens, Missouri, and forty years at Farmington, Iowa.

Resolutions

Resolutions of Sympathy for the Death of William P. Slattery, M.D.:

The Dubuque County Medical Society, through its committee, deploras and regrets the death of its thirty-year faithful member, William Patrick Slattery, M.D.

Dr. Slattery was born in Tipperary, Ireland, February 4, 1868. He graduated from the primary and scholastic (Thulas) schools in Ireland and took the first two years of a medical course at the State University of Iowa. His third and graduating year was taken at Bellevue Hospital Medical College, New York City. After his medical degree he served a year's internship in the Bellevue Hospital and was house physician at Mercy Hospital, this city, for a time thereafter.

Dr. Slattery has been a member of the Dubuque County Medical Society since his first year of medical practice here, in 1893. In 1907 he was its president and from time to time has held one of the various offices therein. His judgment and foresight were always unerring and always commanded the respect of the members in its meeting and deliberations.

At various times he was county physician. He was also one of the leading railway surgeons for many years. He was always a general family physician and all his cases, severe, complicated and mild, ever had the advantage of his extensive education and good judgment.

Physically, our colleague was liberally endowed. He was a champion athlete in his college days and, until late years always in perfect health. His early death is therefore all the more poignant to us, as he was only in his fifty-fifth year.

Dr. Slattery was generally beloved by his colleagues, and their sympathy is hereby extended to his family and patients in their loss.

A copy of these expressions, in accordance with resolutions passed at a special meeting of the society, October 20, 1922, shall be entered in the minutes of the society, published in the daily papers and sent to his bereaved family.

Respectfully signed,

I. S. BIGELOW, M.D.,

J. H. SCHRUP, M.D.,

Committee.

Dr. E. K. Anderson of St. Charles was struck by a Burlington passenger train and instantly killed near St. Charles while returning to St. Charles, after having made a professional call. He was born in St. Charles fifty-five years ago, succeeding in the practice of medicine, his father, Dr. Wm. Anderson, who was one of the early settlers of South township, locating there in 1869. After completing a high school course, he attended Simpson College and the Drake University of Medicine, supporting himself during his college years by teaching school and then taking up his life work in the town where he was born and raised.

Charles Henry Bryant, born April 24, 1857 at Sycamore, Illinois, died November 17, 1922, aged sixty-five years six months and twenty-three days. Graduated from Chicago Medical College, spring of 1879 before he was twenty-one years old. Associated with his father in practice for six years at his home town of Sycamore, Illinois, coming to Corning, Iowa, spring of 1885 where he enjoyed a large practice until a short time before his death which was caused by cerebral hemorrhage.

Resolutions—Adams County Medical Society

Whereas providence has removed from our midst Dr. Charles Henry Bryant, therefore be it resolved: That we extend to his family and friends our sympathy in the loss of an affectionate husband and friend:

And that a copy of these resolutions be published in each of the home papers and a copy be published in the Iowa State Medical Journal, and that the resolutions be properly placed on the records of the Adams County Medical Society.

J. H. WALLAHAN,

F. H. BINDER,

Committee.

Dr. Joseph H. Hull, died at his home in Washington, December 17, aged seventy-eight. A graduate of the College of Physicians and Surgeons of Keokuk in 1874 and later from Bellevue of New York, he spent all of his professional life in Washington county. Six years ago he suffered an attack of hemiplegia and had been incapacitated since. He was always active in the county, district and state societies. He is the last of the group which met in Washington in March, 1875, and organized the Southeastern Iowa District Society.

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No. 2

AN EXPERIENCE WITH SOME CASES OF FOREIGN BODY IN THE EYEBALL*

W. B. SMALL, M.D., Waterloo

Sometime ago, two cases of foreign body in the eyeball came under my care; both men were automobile mechanics—each one receiving his injury while repairing a magneto and when striking it with a hammer.

Neither had any apparent injury of lens or iris, the media of each was hazy, but a good fundus examination was obtainable. In each instance, the foreign body causing the injury was very small.

On direct ophthalmoscopic examination, we found in both cases, what seemed to be a piece of metal in the fundus. To confirm our diagnosis we had radiographs made, but the radiographer failed to corroborate our findings. This lack of confirmation on the part of the radiographer caused Case No. 1 to refuse to allow any attempt toward removal of the piece of steel for the time being and allowed it to remain in the eye for more than three months.

Case No. 2 came to us on account of failing vision, not realizing the seriousness of an injury received three months previously. In the one case the patient knowingly, in the other case, the patient unknowingly, allowed the metallic foreign body to remain in the eye for a period of three months or more.

When the radiographer failed to confirm our findings in case No. 2, he granted our request for a second examination with the same result as the first.

Not being satisfied with this we explained the situation to the man's employer and requested that he be sent elsewhere for examination to determine, if possible, whether there was any foreign body in the eye. Accordingly he was taken to Iowa City, seen by Doctor Boiler, a radiograph made, a foreign body found and located.

On his return to Waterloo the patient was taken to the Presbyterian Hospital, when, with the dissenting radiographer present, the piece of steel was removed with a magnet through a scleral incision.

Upon this occasion the radiographer requested the privilege of making a second examination of case number one and when this examination was made, a metallic foreign body was found; this was also removed with the magnet through a scleral incision.

Both cases were followed some time later by detachment of the retina and entire loss of vision.

How much the tardy removal of the foreign body in these cases had to do with the present condition we do not know.

This experience is given to call attention to the unreliableness of the x-ray in determining the presence or absence of small pieces of metal in the eyeball and the trustworthiness of the findings by direct ophthalmoscopic examination when the media is sufficiently clear to admit of a good fundus examination.

Case Reports

Case 1. November 21, 1917, J. J. Neyemeyer, age thirty-three; was struck in right eye, while hitting a piece of steel with a hammer. There was conjunctival and sub-conjunctival hemorrhage irregular in shape about 5 mm. by 5 mm. between inner limbus and canthus. At the upper part, probably 4 or 5 mm. from limbus and above horizontal meridian, there appears to be a small perforating wound of sclera. There is some hemorrhage in anterior chamber and vitreous; the fundus is hazy. In the fundus, opposite conjunctival hemorrhage is a light colored spot and to temporal side of light spot, a dark spot with a metallic luster. Radiograph shows no foreign body, however, believe there is a metallic foreign body in eyeball. Gave atropin and dressed.

November 22, V equals 20-98.4 for right plus 1.25 equals 20-19.7. Media clearer than yesterday and am more certain of metallic foreign body in fundus.

December 10, V equals 20-16.4 with plus 1.00, together with plus .50c at 90 for right. Foreign body same location; exudate about border of foreign body less.

*Presented at the Seventy-First Annual Session, Iowa State Medical Society, Section Ophthalmology, Otology and Rhinology, Des Moines, Iowa, May 10, 11, 12, 1922.

December 28, V of right 20-16.4 plus 50c at 90 a little plainer. Vision of left equals 20-16.4.

February 25, 1918, x-ray examination and findings of steel.

March 11, removal of steel with magnet.

March 18, V of right 20-65.6 plus 1.50 equals 20-19.7.

March 23, V of right plus 1.25 equals 20-19.7.

About six months after removal of the steel detachment of the retina occurred with subsequent entire loss of vision. The eye has remained entirely free of any inflammatory condition.

Case 2. February 8, 1918, J. C. Nightingale, age twenty-eight. About three months ago was struck in left eye while chipping steel; does not think it had anything to do with present condition of eye; however about two months ago he noticed his vision failing. Got some solder in eye a few days ago. Today V equals 20-19.7 plus for right and 20-98.4 dimly for left. Left pupil slightly larger than right, but reacts about, if not altogether normally. Dilated pupil with homatropin; find exudate in lower nasal quadrant and what looks like foreign body covered by exudate about the center of quadrant. Radiography, negative.

February 10, went with him to Iowa City. Doctor Boiler thinks it looks like foreign body. X-ray shows a foreign body.

February 12; at Presbyterian Hospital removed piece of steel about 1 mm. by 2 mm., through scleral incision with magnet, the point being introduced into vitreous.

March 15, V equals 20-19.7 plus for right and counts fingers with left.

June 15, pupillary reaction of left very slight, perception and projection of light not good. Vision of right equals 20-16.4.

A few months after removal of steel detachment of the retina occurred with ultimately entire loss of vision. He has had attacks of inflammation with tenderness at two different times following being hit in this eye.

Discussion

Dr. William F. Boiler, Iowa City (opening)—In regard to the remark of Dr. Small about the x-ray not being quite reliable as to foreign bodies in the eye, I will say that in my judgment, the x-ray, as far as localizing foreign bodies is concerned, though not infallible, is all right. If you cannot localize, it does not necessarily follow that the foreign body is not there. I can think of two instances which occur to me, recently, in which individuals have come in that have been struck in the eye by a foreign body. I sent them down to the x-ray and got a negative report but was able to extract a tiny piece of steel with the magnet in each instance. In looking over the reports of these foreign bodies, I was particularly struck with the different way individuals went about this thing. In one of the British Medical Journals a couple of years ago, I have forgotten who was the author, they recommended going ahead and

trying a magnet and getting out the piece of steel right away. They would not even wait for a plate to be made and developed because they felt that waiting that long was losing valuable time. I do not know his statistics about the amount of vision he got, after his results. On the other hand, a man who was working in Sheffield, England, among the steel shops there, laid a great emphasis on localization. He says "Localize your foreign bodies for two or three days, if necessary, then you can take out the body and you are reasonably sure how you are working to take out your foreign body." It seems to me that these foreign bodies are pretty much up to the individual operator, depending very much upon your equipment and upon your experience. I have had very little success in getting a foreign body out through the route of entrance. Perhaps my magnet was not strong enough. I haven't a Haab. I have never gotten one out through the anterior route with one exception. The posterior route has been very much more satisfactory to me but I will have to admit that my results have been pretty much on the order of Dr. Small's, so far as after effects are concerned. I think that my statistics show about 5 or 6 per cent of useful visual results a year, or a year and a half after the foreign body has been removed by the posterior route. I do not feel that a person is justified in waiting very long for localization, but unfortunately, most of our cases are cases which have come to us at various periods of time after the injury. Another point that you must take into consideration is somewhat of the nature of the foreign body. If the foreign body is clean, your chances are 99.9 per cent better than if the foreign body is not clean.

Dr. Elmer P. Weih, Clinton—I have recently had considerable experience with foreign bodies, results of which, some have been very nice and some of which have been very discouraging. I want to report a case that had a good result. This man was an electrician at the time of his injury and he was using an iron hammer when something flew into his eye. This man consulted a fellow oculist in the city and they took an x-ray and this x-ray plate showed something, so they said, so knowing that I had a magnet, he brought the man over to me and I tested him out with the magnet and when using the magnet, he had severe pain. We took him back to the hospital and looked at the plate again and you could see a tiny sliver, so we took a lateral view which showed the same thing. It must have been about a fourth of a mm. wide, that is pretty narrow and perhaps a mm. and a half one way by two mms. the other way. On examination, this eye showed a tiny punctured cut through the cornea, and looking at the lens, it was clear with the exception of a point just at the lower part of the pupil, there was a longitudinal cut through it just as if you had taken a tiny knife and slit through it, and looking into the fundus you could see this foreign body. This foreign body we removed through the sclera by making a pos-

terior cut and just inserting the tip of the magnet through the opening of the sclera and the sliver came out with ease, the wound was closed. No suture was used through the sclera, but the wound was closed with a conjunctival flap. This man made a good recovery and he had, a year afterwards, 20-30 vision in that eye with apparently no further changes in lens. In my experience it was the only case where a lens was cut through, that there has been no apparent cloudiness. It is still my opinion that this lens will become hazy. However, I am going to watch this patient with interest. The point that I wished to emphasize was the fact that on reading these plates, the radiographers, especially in cities of our size, are not skilled in taking plates of foreign bodies in the eye. They are not skilled because they do not make very many of them and I think it is not wise to depend entirely upon the plates where you can use your magnet in diagnosis, but that you should use them both. I think there is much to be said upon the subject as to method of operation, whether to use the anterior route or the posterior route. Over in Europe they use almost exclusively the anterior route and it is needless to say they have very serious effects, because you cannot remove a foreign body through the anterior route without doing a large amount of injury to the vision as you have to pull the foreign body through the anterior chamber. If the foreign body is in the posterior chamber and you know it is there, then by all means take your foreign body out through the posterior route. For instance, in prolapsed iris or marked damage to your lens, then of course indications are to take it out through the anterior route and at the same time take care of the destruction that is caused by the entrance of the foreign body.

Dr. William W. Pearson, Des Moines—This is a matter of considerable interest to me because I frequently have cases referred to me by the industrial commission for an opinion. In regard to some of these cases of foreign body in the eye, I am a little surprised at Dr. Boiler's statement as to the value of the radiograph. My experience is that if we are dealing with a metallic body, our x-ray man, our radiographer, is capable of demonstrating the presence within the eye and also the location. I have had no difficulty whatever in following him in removing the foreign bodies as he has located them. If there is any doubt in my mind as to the presence of a foreign body in an eye, I ask him to take several pictures and when he tells me that there is nothing in the way of a metallic body within the eye, at the end of a demonstration, I feel that the case is closed as far as the metallic foreign body is concerned, and with his ability to locate it, I have been well pleased. You must remember, however, that Dr. Burcham is a man who is doing that work exclusively and is well trained. I understand he was among the best on the Western front and previous to that time devoted his entire attention to this work so that he is not an ordinary operator with this ap-

paratus. Now as to the value of localization—that means everything to me. If this man tells me that he can localize it in a manner that indicates to me that the foreign body has passed through the eye and is in the orbital tissue, I am through. I do not bother with a minute body in the orbital tissue and it just tells me the difference between going after it with the magnet or permitting it to remain where it is. I regard this as one of the strong points in the localization. Now some of us were doing this work previous to the time that Dr. Sweet⁺ perfected his localizing apparatus. We have heard some reference to the Giant Magnet and I have a very excellent one, and have employed the Giant Magnet to locate the presence of foreign bodies within the eye. I was never well pleased with it and it would be very exceptional for me to make use of this when I have a radiographer that is skilled. I feel that the time of the magnet diagnosis is practically obsolete. Now as to the passage of a particle of steel within the lens, I have seen upon several occasions a very small particle of steel going through the lens. If the point of entrance in the capsule is closed, on examination of those cases months and even years after, you may find a slight opacity of the capsule at the point of injury. I can recall, I think, three of those cases. I have not examined all of them two or three years later, but I have followed part of them over a period of time. It depends upon the nature of the wound in the capsule and its ability to close after the object is removed. Now as to the method of removal of a foreign body, as to whether it should be drawn forward and removed through the wound of entrance, its proximity to the sclera and route with least danger to the delicate structures of the eye determine the procedure. Another point—the Giant Magnet, which is a very expensive affair, I have practically discarded. I use a little hand magnet, I think it is far better. I think that was the experience of Hirschberg, who wrote very extensively along this line perhaps six or eight years since. He dropped practically the entire use of the Giant Magnet and employed the hand magnet. For anyone who contemplates doing this work, it might be well also to consult Dr. Lancaster as he has discussed the value of the different magnets. Some of the magnets on the market have a very slight pulling power due to defects in their construction, while others of the same size have a maximum pulling power simply because they have been manufactured by skillful producers. You will pardon me for repeating something relative to this compensation business. Now in a matter of this kind where a lens is injured or a foreign body within the eye has been successfully removed, we must think individually of our patient if we happen to have known him over a period of time, also of the employer or the insurance friend who would like to make a settlement. Let us be fair in these cases where we cannot anticipate a degree of change; rest over a period of months or even a year before a final settlement; advise these people to the

best of our ability so that in the end we may be fair to the insurance company, the employer, and the injured individual.

Dr. H. B. Gratiot, Dubuque—In cases of foreign bodies in the vitreous, that have been in the vitreous chambers for some time and there is no reaction from them, why should we try to remove them? I have in mind one case that was taken care of by my father long before I had even thought of studying medicine. I had the privilege of examining this old lady eighty years of age recently with a small foreign body in the vitreous chamber, and this is her one good eye. I have in mind another case that had a small foreign body penetrate the sclera and lodge in the vitreous three years ago. Aside from the vitreous opacity surrounding the foreign body, there are no changes, and the patient has fairly good vision. I did not advise any interference. If the patient had come under observation at the time of the injury, I should certainly advised immediate removal. I doubt the advisability of attempting a removal now, unless he develops some inflammatory symptoms.

Dr. Chas. P. Frantz, Burlington—I expected to draw a little condemnation upon myself before Dr. Gratiot discussed this paper. I was wondering if Dr. Small had left those particles in, whether the eye would not have been in better shape today. I recall a case sixteen years ago; a foreign body went through the cornea and lodged in the lens, causing partial cataract. I simply watched it and finally the lens began discoloring. The man came to me often for observation. He had no symptoms of pain nor anything alarming but finally I became uneasy lest some internal changes were taking place and I advised enucleating. It was a railroad case and I felt that the company would want that done for its own protection and for the man's protection as well. I watched the case until he quit coming to me of his own accord. I have not seen him excepting a few times on the street for some years. The last time I saw him at the office, the particle had disappeared as the lens had become clearer and apparently somewhat liquified. It was a test of just when a foreign body should be allowed to remain. That has been sixteen years ago, as nearly as I can figure. I think he has never had his eye fitted until recently and he had a fair amount of vision when I saw him last. Now this man has carried this foreign body for some years in the lens and now free in the vitreous and has never had any alarming symptoms. I saw a case, after I started to practice, where a man had been carrying a foreign body for forty years and was still carrying it when he died. He had vision of about 20-50 with correction. So I am wondering if we ought to always remove a foreign body, if we believe they are not dangerous, without watching them. I think we ought to be a little more conservative about removing foreign bodies, also a little conservative even if a foreign body can be localized. On the other hand, I would agree that the cases in which

they may be safely left are the exception and an exceedingly small per cent of those seen. My experience with the radiographer has been very satisfactory. I feel that in no case where a foreign body was in the eye, or suspected, has the radiographer been wrong, although this must be accepted as a statement in the abstract only. I believe it is not always necessary to remove the small particle.

Dr. J. E. Reeder, Sioux City—In reference to compensation, it seems to me in any case where the question arises for compensation due to a perforating injury, or foreign body in the eye ball, the patient should always be given the benefit of the doubt. I instruct them to settle on a contingent basis so they may have the privilege at any time to re-open their case for a hearing, as it is only justice to the patient from an economical standpoint, and society itself, to see that these cases are treated fairly when it comes to compensation.

Dr. J. M. Patton, Omaha, Nebraska—There are two or three things I would like to mention in connection with this very valuable discussion. The first is in regard to the patient's statement. I have had a number of patients come to me with injuries which looked as though they might have been caused by the entrance of a foreign body into the eye and where the patients were absolutely sure that no such things could be possible. I remember a case in particular where a man had been sent to us from a considerable distance, because he had a dilated pupil. The patient was sure there could be no foreign body in the eye, and on examination, the lens was somewhat cloudy and there was something in the vitreous. I could not make out a foreign body but it seemed to me that the iris was somewhat sclerotic. The x-ray and the magnet showed a small foreign body which I removed and the iris promptly came back to its normal size. Do not take the patient's statement as final. I think it was Dr. Derby who said, "Never pass an ocular injury as negative for foreign body until you have tried it yourself." In other words, suspect penetrating wound of harboring an intraocular foreign body unless you can satisfy yourself to the contrary. Second: In regard to our localization, Dr. Boiler brings up a very important point. Can we trust the x-ray or can we not? Now, before the perfection of our localization methods, my colleague, Dr. Harold Gifford, advised the practice of putting a little piece of metallic substance underneath the conjunctiva as close up to the cornea as possible. A little piece of sterile silver wire does very well. These little markers stand out clearly in the plate and you have a fixed measuring point. Now since we have been doing the localizations or having them done, we still use these little markers and in the case that Dr. Boiler mentioned, had they been used, he could have told whether or not the eye had been moved. Another thing, one of the gentlemen mentioned that his radiographer was not very expert because he did not have the opportunity to examine a lot of these cases. The man who does the

most of our work has been at it for years, and it is a pretty good plan if you find somebody reasonably good, to stick to him. We worked out our technic in this way: I got several pig eyes which are near the proper size, put some foreign bodies in these eyes and froze them. They were placed in the orbit of a dry skull and the radiologist x-rayed them. He did his localization on his plates while I located them in the frozen eyes. He thus developed a technic which has been a great aid to us. Our experience would correspond very closely with that of Dr. Pearson that the x-ray is a very valuable aid to us in determining the presence of a foreign body. Only one instance do I recall, there may have been others, where the x-ray did not show a foreign body which later proved to be present, and that was a tiny particle which was like the point of a fine needle. It was in the anterior surface of the lens so that we could see it. I am not sure that it was under the capsule, it was so tiny that we had to open the anterior chamber before we could get the magnet down close enough to pull it. In that case, the x-ray did not show it but we felt the apparatus was entirely blameless because the object was so very minute. Now one other point. Dr. Gratiot brought up the idea of the harmlessness of some of these foreign bodies. In our experience, we have seen cases that have carried foreign bodies for a considerable number of years and invariably they eventually came to grief. I think that we will do much more harm in leaving them than if we attempt to remove them or do remove them by improved scientific methods. In other words, we may save the vision if the foreign body is removed, while it is almost sure to be lost if left in the eye. I remember a case in which we had a foreign body that was tightly stuck in the sclera and was impervious to the action of the magnet. We watched the man for a few weeks and the retina gradually began to disintegrate and we knew the eye was going to be lost. The vitreous was sufficiently clear so I could go in there with a long knife needle under direct ophthalmoscopy and loosen that foreign body, draw it into the anterior chamber, and remove it through the cornea. As to the choice of instrument, I would just like to mention the ring magnet. I know Dr. Lancaster, whom Dr. Pearson mentioned, thinks it is a pretty poor specimen of instrument, but we have one of them that we have used for a number of years with real satisfaction. If when using the ring magnet after the foreign body is drawn into the anterior chamber, you make your corneal incision with the current turned on, very often the foreign body will adhere to the tip of your knife and become entangled in the wound as the knife is withdrawn. You then need only to apply the tip of the magnet to the region of the incision, when the foreign body will come out almost without any loss of aqueous. The procedure alone makes the use of the magnet very well worth while.

Dr. George A. May, Des Moines—In connection with the discussion of this paper, I think it is well

enough to mention a case that I saw about two months ago with Dr. Walker. Dr. Burcham had localized a foreign body about 2 mm. behind the globe, but with the ophthalmoscope, Dr. Walker and I could see the foreign body in the vitreous. The case is worth mentioning as a variation from the general course of the discussion.

Dr. W. B. Small (closing)—The thing that I want to particularly call attention and to which I did call attention in the paper, was this: The habit that some of us have of relying upon laboratory work to make our diagnosis in place of using our heads. I called attention to the fact that these were small foreign bodies that were missed by the x-ray, and that in my judgment, when you can see the foreign body by direct ophthalmoscopic examination, that it is more reliable than the x-ray. When you find that your x-ray does make a mistake, and when you have an accident in which your foreign body has caused so much hemorrhage, intraocular, oft-times that you cannot see it, and your x-ray does not show it, what are you going to do? It is unreliable. I should hesitate to leave any foreign body in the eye. I believe the consensus of opinion of the men over the country is that sooner or later, changes take place which make it necessary to either remove the foreign body or remove the eye and the safer procedure is to remove your foreign body and remove it early.

RECURRENT HEMORRHAGE INTO THE VITREOUS*

With report of a case

MARTIN J. JOYNT, M.D., LeMars

My experience with a case of hemorrhage into the vitreous has been the occasion for writing this paper. This has been the first and only case I have seen and judging from my experience and the very slight mention of it in text-books, I thought it very rare. Upon searching the literature and case reports I find that the subject has been written up quite extensively and even the March number of the American Journal of Ophthalmology contains an excellent article by Finoff of Denver. All these articles are so much alike in their description of cases, causes, etc., that I fear this paper will seem only like a repetition to those who have followed the literature closely, to others who have only given it a passing thought, it may be worth while to once again call it to your attention.

This is a very distressing affection, occurring chiefly in young men, often resulting in total blindness or at least to a very seriously impaired vision of the patient. It is characterized by a

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spontaneous hemorrhage into the vitreous which occurs very suddenly, becomes gradually absorbed only to be followed by another of similar character. Each hemorrhage seems to be followed by the formation of connective tissue, producing a retinitis proliferans. The disease was first described by Von Graefe, the condition was more thoroughly described by Eales who gave it the name recurrent retinal hemorrhages. Most of my information has been gleaned from two papers, in the American Journal of ophthalmology for September, 1920, one was written by Wm. Zentmayer of Philadelphia who reports four cases and the other by Edward A. Davis of New York who reports one case and refers to one he had reported previously. Zentmayer in his summary of Eales original paper which was based on the study of seven cases, reports as follows: "All the patients were males ranging in age from fourteen to twenty years; they were dyspeptic, low spirited, wanting in energy and complained of frontal headaches, epistaxis, and constipation.

"The pulse rate was habitually under 60, although in the interval of ocular and nasal hemorrhage it might rise to 72. The number and proportion of blood cells was normal. The exciting causes of hemorrhage, recumbent posture, stooping, coughing or laughing. In three of the cases the fathers had epistaxis, in all this group the left eye was primarily and chiefly affected. When first seen the vitreous was opaque from hemorrhage and the fundus was invisible or visible throughout a small portion of the upper part of the periphery and here extravasated blood was found in the retina. There was often a rapid diminution of the opacity of the vitreous, followed by a sudden recurrence of the opacity from fresh hemorrhage after a few weeks or months.

"Many such recurrences took place, in each case vision seemed to suffer only in proportion to the opacity of the vitreous.

"Between the attacks it sometimes recovered its normal acuity, although vitreous shreds were discoverable. The vessels in each eye were large and tortuous, especially the veins which were also remarkably dark colored. The hemorrhages were confined almost entirely to the extreme periphery of the retina, the extravasations were almost always large and round and bleeding, and could often be seen to proceed from the venous radicles."

The cause of this disease is by no means definitely determined, as predisposing factors we have age and sex, it nearly always occurs in men and usually in the years from eighteen to twenty-five.

There is a marked preponderance of the disease in the left eye, though it can occur in the right and sometimes in both, while it has occurred in women it is not nearly so frequent. As an exciting cause, most authorities seem to consider tuberculosis an important factor but they are by no means agreed on this. Syphilis may sometimes be the cause but most of the case reports give a negative Wassermann, on the other hand the case I have to report gave a marked positive Wassermann and all our improvement was gained under anti-syphilitic treatment.

In some it may be due to an autointoxication from constipation. Fuchs is not at all certain of the cause and claims the nature of the affection is unknown.

We may be safe in assuming that hemorrhage into the vitreous is not a specific disease nor has it any one well determined cause and it may follow most any of the more chronic diseases or debilitating conditions that leave the individual physically below par but why it should attack mostly young men and between certain ages, does not seem to be well explained by anyone.

The treatment of these cases, like the etiology cannot be specific or well defined but both local and general measures are followed. General treatment is any measure that will improve the general health of the individual and since most of the cases reported react to tuberculin and many of them were definitely tubercular, most writers have treated them with tuberculin and anti-tubercular measures. Salvarsan is given in the syphilitic cases, tonics, laxatives, rest or change of occupation are advised when indicated, the object in view being to prevent a recurrence of the hemorrhage. Some report venesection and as a last resort the ligation of the common carotid artery. The local measures are directed more to promoting absorption of the existing hemorrhage by the subconjunctival injections of natural salt, or fibrolysin, and instilling dionin, also the internal administration of potassium iodide.

Case Report—V. K., twenty-four, farmer, father of one healthy child about one year of age, was first seen October 3, 1921, who gave the following history: In April, 1921, just after returning from a picture show he noticed a sudden dimness in the left eye, as near as he can remember, this only lasted four or five days and he paid no further attention to it at that time. On October 2 the next period of dim vision appeared very suddenly, following no particular strain, although he had been working quite hard for several days, the impairment of vision was much more marked than the time previous so he came in for treatment.

On examination we found a rather tall thin individual who did not appear in good condition physically, he claimed he had lost about thirty pounds in weight and complained of feeling rather tired all the time, his appetite was not good and he suffered from constipation. On his arms, especially around his elbows he had a large number of rather dry scabs and his back showed the marks of an old eruption, he claimed to have had this condition for the past three years but was unable to get any other direct history of syphilis, a Wassermann showed three plus which together with other symptoms cleared up the diagnosis. He also had tonsils quite badly infected and a marked deviation of the nasal septum which caused him considerable discomfort.

Examination of the eyes showed the right eye normal with a 20-20 vision, the left eye showed a diffuse cloudiness of the vitreous and no fundus details visible even with a dilated pupil. The vision was about three one hundredths. October 8 he appeared again with the condition unchanged.

October 31 vision was 20-40 and we could obtain a few glimpses of the retinal veins in the upper nasal quadrant.

December 31 he appeared again, and he evidently had a recurrence of the hemorrhage the day before, as his vision in the eye was as poor as when first seen.

January 18 he had gained twenty pounds in weight and feeling much better with the skin on the elbows clear. The eye was again clearing with vision 20-40 but was unable to see through the hazy vitreous although it was some clearer than at the previous examination.

April 1, examination at this time showed vision 20-20 with a good view of the fundus, except the lower temporal quadrant which still seemed quite hazy. The veins appeared quite normal but about two discs diameter above and a little to the right of the disc was a triangular white spot about one-half the area of the disc which had somewhat the appearance of a proliferating retinitis. The lower temporal quadrant had always appeared the most opaque and undoubtedly had the most hemorrhage and am still unable to give any description of the fundus in this area.

April 24, vision normal and fundus quite clear everywhere, unable to see the white spot mentioned previously but a little distance from this area could see two spots of hemorrhage along the course of two veins, these spots were each about one-fourth the area of the disc. The lower temporal quadrant was now clear and showed no abnormalities along the course of the veins.

The treatment of this case was a course of anti-syphilitic treatment only, given by my partner Dr. Larsen. There was no local treatment to the eye nor any modification of his diet or occupation.

At the present time we feel well satisfied with the favorable progress of this case. The right eye has remained normal at all times and the left eye has

showed no recurrence of hemorrhage since last December, however, as the case reports I have read record hemorrhages recurring after one and two years, it would seem that we could give him no positive assurance that he has fully recovered.

Discussion

Dr. Steven O'Brien, Mason City (opening)—My clinical experience on this subject has been rather limited, and what experience I have had has impressed upon me my inability to find a cause for these hemorrhages. Literature will give you a variety of causes but there are always some cases where no cause can be found. From the cases I have observed, it seemed to me that it was a disease of the blood-vessel wall. I would like to ask the opinion of the others as to the blood-vessel wall being the cause and also if they have taken the tension in these cases at different times during the course of the disease, and if so, their findings.

Dr. W. W. Pearson, Des Moines—I do not think we should permit a paper of this kind to go by without a little more discussion. I think the essayist was not as critical as he might have been in his definition of the recurrent hemorrhage within the globe, but I think a case history something like this is more to the point. I recall a case which I saw ten or fifteen years since. In this instance, the young man was a graduate of the University of Michigan, lived in one of our neighboring county seats. The definition that Dr. Joynt gave for the type of individual, however, applied to him. He was tall, slender, if anything a little effeminate in appearance, intellectual as a student but he was not of the athletic type. Now this man, as I recall it, had had recurrent hemorrhages over a period of two or three years. I saw him soon after his first experience. There was nothing but a single point in the retina from which the blood escaped and I saw him several times—I do not recall the number—each time with a fresh hemorrhage, and before the hemorrhage would appear, his condition was practically normal. It was not one of the type of more extensive hemorrhage where we had as a result disseminated retinitis and was rather interesting to me after a year or eighteen months' observation. This was a very observing patient and kept a little memoranda in his pocket which he drew out after nearly a year of trouble with this eye. I might say too, it was his right eye rather than his left. The recurrence of hemorrhage was practically the same in every instance, about four weeks apart, varying occasionally, but there was a regular recurrence, and the point from which the hemorrhage was taking place, could be clearly seen. As an answer to Dr. O'Brien's query, there was no marked increase in tension. There was no inflammatory trouble, it was simply a recurring hemorrhage. I think the men who write on this subject are disposed to confine their classification of recurrent vitreous hemorrhage to this type rather than to a specific cause—one of these cases where we speculate as to

the cause and are unable to draw any definite conclusions.

Dr. M. J. Joynt, Le Mars (closing)—There was one trouble I had in looking over these cases—the way they were classified. Most writers seemed to jumble them up so that you could not differentiate one from another, most of them seemed to be of a tuberculous nature. At least the individuals had tuberculosis but no tubercular evidences were manifest in the eye. We did not take the tension of this boy's eye, but I doubt if there was any increase.

ANTERIOR POLIOMYELITIS: A REVIEW OF THIRTY SPORADIC CASES*

CYRIL G. FIELD, M.D., Ft. Dodge

In its sporadic form, infantile paralysis is undoubtedly an old disease but it was never clearly separated from other forms of paralysis in children until 1840 when Heine described it as a separate entity. The first authentic account of an epidemic was that of Bull in 1868. A second was described by Bergenholz in 1881. From that time forward epidemics have appeared with increasing rapidity, size, and severity, culminating in the great New York epidemic of 1916 with its 25000 cases. The somewhat unique creation and development of epidemic force in this disease, together with the fact that this power is apparently increasing, lends to the problem of poliomyelitis a gravity which should be fully appreciated.

The small series of cases which I here use as a basis for a general discussion of the subject were seen during the past two summers in and about Ft. Dodge. I have selected only those cases which were seen early and frequently during the course of the disease and which showed definite lower neuron paralysis. The uncertainty of diagnosis in abortive, meningitic, ataxic, and polioencephalitic types has led me to select only cases of the so-called ordinary paralytic and progressive types.

There is certainly a strong individual predisposition to poliomyelitis since most of the children exposed do not acquire it. By observation of large numbers of exposed children Herman¹ has determined that only 2 per cent are susceptible to infection. (This percentage is relatively small when we remember that 100 per cent are susceptible to measles, 70 per cent to whooping cough, and 20 per cent to scarlet fever and diphtheria.) This immunity, in some cases at least, is probably acquired through unrecognized attacks of the dis-

ease. The relative immunity of adults is undoubtedly partly due to such attacks.

The disease attacks chiefly children under five years of age, but persons of any age may be affected. In Werstead's 6,775 cases in Scandinavia 24.2 per cent were fifteen or over. The youngest was five days and the oldest seventy-nine years². Fourteen of my cases were over fifteen. The ages ranged from one and one-half to twenty-seven years. In temperate climates the epidemics have all occurred in the warm months but sporadic cases occur throughout the year. It resembles typhoid in its greater prevalence during the late summer months. In my series twelve occurred in August, ten in September, six in October, and one each in May and June. It is especially communicable during the first stages before paralysis occurs, and spreads chiefly along the lines of travel. Transmission occurs chiefly through direct contact with secretions of patients or carriers but may take place through the more indirect route of insects, dust, food or drink³.

The filterable virus of Flexner and Noguchi is still believed to be the essential cause in spite of some temporary doubt thrown on the subject in 1916 when Rosenow, Mathers, Nuzum and Hertzog, and others described a pleomorphic streptococcus as the possible cause.⁴ "The microorganism consists of minute globoid bodies measuring 0.15 to 0.3 micra in diameter, which are arranged in pairs, chains, or masses. They resist the action of glycerine and are capable of passing through the Berkefeld filter. Inoculation, either by means of the virus obtained from an infected spinal cord or by means of the cultivated organism, is most easily accomplished by direct injection into the brain; but injection into the peritoneal cavity, the eye, the subcutaneous tissue, the intrathecal space and the nerve trunks have all been successful in producing the disease with varying degrees of certainty. Inoculation of the blood stream nearly always fails to produce the disease as the blood seems to have a definite destroying influence on the organisms." The disease can be produced by applying the virus to the uninjured nasal or intestinal mucous membrane of the monkey. The virus is always present in the secretions of the mouth, nose or upper respiratory tract during the acute stage of the disease. It is found here not only in sick patients but in healthy contacts, and those suffering from abortive forms of the disease.⁵ It has been proven beyond question of a doubt that the infection reaches the central nervous system by means of the perineural lymphatics as is the case also in rabies, tetanus and diphtheria.

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The incubation period averages seven days¹ and the symptoms begin with an initial fever which is usually accompanied by headache, respiratory or gastrointestinal disorders, mild somnolence and irritability when aroused. Stiffness of the neck is frequently present. This stage lasts from one day to a week and is frequently entirely recovered from before paralysis begins. The abortive cases show no further symptoms than these.⁶ Of the thirty cases here considered two had no symptom or sign during this stage except an inexplorable fever. There was headache in twenty-eight; stiff neck in twenty-seven; constipation in twenty-four; diarrhea in two; vomiting in eighteen; disurea in twelve; sleeplessness in eight; stupor in four; anorexia in four; marked irritability in two; normal mental state in twenty-one; distention of abdomen in six; all of whom died; markedly tremulous tongue in nine and Kernig in six. Heiman states that a tremor of the hands is one of the most characteristic signs of the disease, but, although watched for carefully, was seen in only two of my cases.⁷ In only one of the thirty cases was there any muscular twitching. Regan says congestion of the throat is a constant manifestation of the early acute stage but was absent in six of my cases. "The redness is usually limited to the faucial mucosa and is a deep red, with a violaceous tinge."⁸ Swollen joints are said to occur but I have not seen this phenomenon.²

About half of my cases were found lying on the side with head thrown well back. Such were always somnolent and remarkably irritable when aroused. The other half lay on the back and were perfectly normal mentally. Two cases had an urticarial rash during the first two days. Regan says rashes occur in about 10 per cent of cases, principally in the younger children.⁸

Paralysis usually occurs on the third to the sixth day and practically never occurs after the eighth.⁶ In my cases it occurred on the 2nd in two; 3rd in eight; 4th in eight; 5th in six; 6th in two; 7th in four. In five the paralysis was of the ascending type (Laundry's paralysis). Practically any muscle or group of muscles may be affected. Of these thirty cases twenty-six had paralysis of the lowers; twenty of the uppers; ten of the back muscles; four each of the abdominal muscles, diaphragm and cranial nerves. Of single muscles the deltoid is probably the most frequently affected. During the preparalytic stage the reflexes are usually exaggerated, but when paralysis sets in, the affected muscles show a typical lower neuron type of lesion. Forty per cent of cases never show any paralysis.

The leucocytes varied from 12,000 to 21,000 averaging 17,400 with a rather high percentage of polynuclears during the acute stage. Lumbar puncture was obtained in only twenty-three cases during the acute stage, twenty-one of which showed increased pressure. Two of the fluids showed a distinctly yellow color and one was opalescent. The cells varied from 20 per cu. m.m. to 130 per cu. m.m. usually all lymphocytes though one case had 18 per cent of polys. The globulin was invariably increased and they were all bacteriologically negative.

The presence of many cases of encephalitis during the last few years has caused considerable difficulty in differentiation. In poliomyelitis the paralyzes are more or less complete and permanent from the beginning and are asymmetrical while in epidemic encephalitis they are partial, transient, symmetrical and of later occurrence. The cell count in the cerebrospinal fluid and the leucocytes in the blood are much higher in poliomyelitis. Encephalitis attacks patients of all ages while poliomyelitis attacks chiefly children and adolescents. In poliomyelitis the cranial nerves and basal ganglia are rarely attacked while in encephalitis poliomyelitic syndromes are rare.⁹

Study of the cerebrospinal fluid readily differentiates the meningitides except the tuberculous and mumps varieties. Mumps usually presents parotid or submaxillary swellings which do not occur in poliomyelitis and many of my cases had already had mumps. Tubercle bacilli can often be found in the fluid of a tuberculous meningitis case and a skein often forms, neither of which occur in poliomyelitis though a thin film occasionally occurs. Epidemic meningitis is a winter disease while poliomyelitis is a summer disease. Herpes are rare in poliomyelitis and common in meningitis.

Influenza, in general is a winter disease while poliomyelitis is a summer disease. So-called "summer flu" is very apt to be followed by paralysis of one or more limbs much to the astonishment and chagrin of the attending physician. The occurrence of stiff neck, Kernig, leukocytosis or somnolence in an influenza case should make one at least guarded in prognosis.

Multiple neuritis is slower in onset and runs a longer course. It is not accompanied by acute fever and the paralyzes are symmetrical. It always presents sensory disturbances which rarely occur in poliomyelitis.

Meningismus accompanying any of the acute exanthemata, especially if accompanied by a pleocytosis in the cerebrospinal fluid, may make such so closely resemble poliomyelitis that they will be

impossible to diagnose until the characteristic rash appears. The exanthemata usually occur at a different season, however, and seldom show changes in the cerebrospinal fluid.

Typhoid which is similar in seasonal prevalence can be easily differentiated by the leukopenia, Widal, blood culture, splenic tumor and roseola, none of which are present in poliomyelitis.

A febrile condition associated with a pseudo-paralysis of the limbs is seen in rickets, infantile scurvy, syphilitic epyphinitis, osteomyelitis and rheumatic fever. That it is pseudo-paralysis can easily be demonstrated by the condition of the reflexes. In none of these is the cerebrospinal fluid pathological except possibly the syphilitic epyphinitis, and here the chronicity, Wassermann, family history, etc., make differentiation comparatively easy.

During the past three years I have seen three cases of idiopathic ventricular hemorrhage in children which were thought to be possible infantile paralysis cases until the lumbar puncture revealed a bloody fluid which does not occur in poliomyelitis.

In six of these thirty cases the onset of the disease occurred shortly after a fall and in three the inability to move the limb was thought to be due to an injury which was not noticed at the time of the accident. In these cases the history, the reflexes, the stiff neck and cerebrospinal fluid findings made differentiation easy.

In diphtheritic paralysis the ninth, tenth and third nerves are affected first, and if the extremities become involved, sensory disturbances are usually present. The history, throat cultures and cerebrospinal fluid, which is not pathological, should confirm the diagnosis.

The mortality in various epidemics has ranged from 27 per cent to 50 per cent. Young children have a much better chance for life than older children and adults.¹⁰ Wernstedt found the mortality to be 10 per cent to 21 per cent under ten years of age; 21 per cent to 42 per cent in older children and 30 per cent to 60 per cent in adults under thirty; and 40 per cent to 80 per cent at fifty to sixty years.² Ten of my thirty cases died, all but two of which were over fifteen years of age. All those with ascending paralysis or abdominal distention died. A high leukocyte count seemed, in my cases, to indicate a bad prognosis. All deaths occurred within the first five days as is usually the case. Practically the only deaths which occur later than the fifth day are due to complications such as bronchopneumonia.

Paralysis is said to occur in 60 per cent of

cases but of course that depends upon the number of non-paralytic cases diagnosed and is obviously too high an estimate. The immediate paralysis is always much more than the residual. Improvement may be expected to continue for from one and one-half to two years after the acute sickness, after which time no further improvement can be expected. The longer tenderness lasts the slower is improvement to begin. Chances for improvement are better when the paralysis is irregular in distribution and worst when the paralysis involves both legs and reaches a definite level. Where there is complete flaccid paralysis of a muscle with no return of reflex or function within six months the prognosis for that muscle is hopeless.¹¹

Prevention of this disease must for the present consist chiefly in recognition, isolation, and quarantine of sufferers, especially the non-paralytic cases, and disinfection of the naso-pharyngeal secretions. Amos has shown that washings from the nasal mucosa of about 50 per cent of normal people has a strong neutralizing power for the virus of poliomyelitis and that this power is markedly reduced in people suffering from coryza. Therefore children with coryza should be especially guarded during an epidemic.¹² Under no circumstances should nasal sprays be used since they may interfere with the normal bactericidal power of the nasal mucosa.¹³

In 1910 Flexner and Lewis immunized monkeys by injecting increasing amounts of unmodified virus but were not uniformly successful. Later, Levaditi and Landsteiner used dried cords after the method of Pasteur in rabies but were unsuccessful. Finally H. L. Abrahamson perfected a method which has been uniformly successful in protecting monkeys from many times the lethal dose of virus (intracerebrally). **Their** method consists in injecting subcutaneously emulsions of brain and cord of monkeys dead from the disease for five days. The first two doses are heated to 55° c. for one-half hour, the third to 45° c. for one-half hour, the fourth to 37° c. for one-half hour and the fifth is unmodified by heat. The blood of monkeys so treated was found to contain large amounts of neutralizing substances twenty days after treatment. The method seems very practical for humans during an epidemic since it takes only five days for the complete treatment.¹⁴ If we had some means of detecting the susceptible 2 per cent and could immunize them by this method it seems to me that the disease could be prevented. Rosenow and others have claimed to be able to protect monkeys from virus with increasing doses of the coccus

which they believe to be the cause and advocate vaccination of humans with it.¹⁵

All authorities agree that serum from convalescent patients, and people who have had the disease long periods before, is of distinct therapeutic value especially if given early. While not an absolute cure-all it has reduced the mortality in all epidemics where it has been used. The difficulty of obtaining it is, of course, a serious drawback to its use. Transfusions from convalescent donors has also been used with considerable success.¹⁶ This method was tried late in one of my cases of the ascending type but without any noticeable effect.

With regard to Rosenow's serum the results of Amos and Ebersson are unequivocal. They show the Rosenow serum to be devoid of protective power. "Moreover they show that the Rosenow serum acts in the manner of normal horse serum in promoting infection in monkeys from an intravenous injection of virus in itself incapable of producing paralysis."¹⁶

Non-specific medication during the acute stage consists in keeping the patient at rest for a considerable period after the acute symptoms subside. Urotropin, strychnia and daily lumbar puncture are advocated by various authorities but it is doubtful if any are of benefit. Belladonna is recommended where the diaphragm is involved.¹⁷⁻¹⁸

During the intermediate or subacute stage the paralyzed muscles should have complete rest with splints for from four months to one year. Over fatigue, more than anything else, prevents the return of function.¹⁹ The abdominal muscles should be carefully watched for paralysis and a well fitting corset applied if such is present. Deltoid paralysis should be treated with a platform splint. Deformities of the feet and spine, which are apt to become apparent during the second year should be watched for and prevented by light braces. The paralyzed limb should be kept warm and night splinting attended to. At the end of the fourth month light massage may be begun. At the end of six months bath exercises may be begun and careful muscle training started.²⁰ The latter should be done in an orthopedic clinic where they have the necessary appliances, and where nerve transplantation, tenotomies, etc., can be properly performed.

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Discussion

Dr. Frank A. Ely, Des Moines—I consider Dr. Field's resume of the subject an exceedingly comprehensive one. I will merely touch on two or three points that I think are important for discussion. Nasal sprays—The most resistant tissue of the body is the one which is not interfered with. Therefore I believe it goes without saying that nasal sprays are unnecessary and meddlesome pseudo-preventive measures. With reference to our ability to diagnose a pre-paralytic case and the Rosenow treatment—I consider this under the same heading. In my own experience I am free to confess that I have been unable to make a pre-paralytic diagnosis. The statistics of Rosenow very largely depend upon the results that he is supposed to have obtained in the pre-paralytic stage. I think the statistics of Rosenow in this matter are dangerous and not at all convincing. In the first place we do not know all of the conditions which produce an abnormal spinal fluid. The presence of globulin and cells in the spinal fluid simply indicates a meningeal irritant. We know that in the pneumonias of childhood we get an increase in the number of lymphocytes and at times a slight increase in globulin. Not long ago I had occasion to puncture a migraine patient at the height of a rather prolonged attack, and found a slight increase in globulin and also an increase in lymphocytes. What I want to say is that in trying to diagnose a pre-paralytic poliomyelitis we must take into consideration that the evidence is not all in with regard to the cerebrospinal fluid changes in acute febrile, arthritic or so-called rheumatic diseases, therefore I do not think the finding of an increase in

globulin and lymphocytes is conclusive of poliomyelitis in the pre-paralytic stage. During a severe epidemic we are often able to make a pretty good guess as to whether a given illness is, or is not, the disease which is at the time, prevalent. During the flu epidemic you perhaps noticed that out of possibly 100 cases we diagnosed flu about 110 times. The same is true in epidemics of poliomyelitis, such as occurred in Burlington and other places. While I realize that by contact with a large number of similar cases we gained a certain diagnostic acumen that will help us in the future, nevertheless we are apt to go around in time of epidemics and push our average away above 100 per cent. On treating some seven or eight cases with Rosenow's serum during the autumn of 1921, I was unable to get any results which differed in any way from those obtained in cases not so treated. I do not think that the results in these few cases are conclusive at all, but when you have a case coming on actually with considerable paralysis and the patient almost at once entirely clears up without any particular treatment, and then another case comes on insidiously and leaves the patient extensively paralyzed, you then realize the difference in the types of cases with which you have to deal. Such an experience does not permit us to conclude that because, following the use of serum we happen to get a few favorable results, we have had such results from any specific treatment. In my work I have been unable to differentiate the spinal fluids of epidemic encephalitis and poliomyelitis, neither have I been able to find any difference in the leucocyte count of the blood, both running all the way from practically normal to a very high count. I believe that Dr. Field's average with regard to his cell count in poliomyelitis is about correct—somewhere between 15,000 and 17,000 per c.m., and I have found the same thing true in encephalitis. The Wernicke encephalitis of the poliomyelitic type is very difficult to differentiate from epidemic encephalitis, but in the latter we usually have the peculiar lethargic state which we do not see in cases of poliomyelitis. I think the value of lumbar puncture as a therapeutic measure is exceedingly doubtful unless we have very severe headache. During the war it was quite conclusively demonstrated that lumbar puncture in the presence of blood-carried infection sometimes permits the infection to become localized in the meninges. Therefore I am opposed to puncture unless we have a great deal of pressure or other indication for it. It is a meddlesome way of treating the disease.

Dr. Field—Dr. Ely is certainly correct in stating that these cases cannot be diagnosed in the pre-paralytic stage. However, if there is a poliomyelitis epidemic a fever in a child, especially if he has a sore throat or a little stiffness of the neck, or even if nothing but a fever (what is generally called the "flu"), I believe we should adopt the plan of putting temporary quarantine on this case for a week, which would be one method of cutting down the incidence of the disease. While it is not a safe thing on which

to base therapeutic conclusions in regard to the use of serum, etc., nevertheless I believe it would be wise to assume that it might be a case of poliomyelitis and isolate and quarantine the case during its infective stage. With regard to the therapeutic value of lumbar puncture, in a number of cases aside from those mentioned I have found that the mortality seems to be higher in those having had lumbar puncture. I believe we should, if possible, diagnose the condition without resorting to this procedure. Some advocate daily lumbar puncture. However, in one case under fifteen there had been several lumbar punctures and the patient died, while those cases that got along best had none.

THE DIAGNOSIS OF VASCULAR-RENAL DISEASE*

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The term vascular-renal disease is used intentionally, rather than nephritis because between renal function and that of the circulation there is such a close relationship that we can never estimate the former without due regard to the latter. The activity of the kidney depends not alone upon its structural integrity but also upon the volume and rate of blood flow through it.

Within broad limits it is generally conceded that structural change in any organ or tissue influences the functions of that organ or tissue. This might be stated as a general pathologic law. It is often stated also that functional disorders precede abnormal changes in structure. This is however an idea shrouded in obscurity and depends not a little on the definition of functional disorder. Functional disease is spoken of ordinarily in contrast to organic disease. But it is at least difficult to understand any function, normal or abnormal, that does not arise from an organic basis. It is important, it seems to me, to keep these distinctions clearly in mind in order to avoid some confusions that have befogged the subject of vascular and renal disease.

For the century since the first papers of Bright we have sought to understand the relationship between nephritis, cardiac hypertrophy, and vascular hypertension. Until a few years ago the accepted theory was that nephritis induced hypertension which in turn caused cardiac hypertrophy. The cardiac hypertrophy is easily understood as a direct result of increased work. The relationship between hypertension and renal disease how-

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ever is not clear. Various explanations have been advanced but none has withstood experiment and criticism. Any necessary connection between vascular hypertension and renal disease would have been denied probably before now were it not for the support given to the idea of connection by experiments and even more by the commonly observed clinical fact that elevation of blood-pressure follows promptly the onset of some types of acute nephritis—notably that of scarlet fever—and subsides to normal when the evidence of renal disease disappears. But largely because no explanation has been suggested as to just how renal disease can produce hypertension, and also because cases of hypertension have occurred without demonstrable nephritis, the hypothesis has been suggested that hypertension is the primary disorder and nephritis its consequence. This hypothesis assumes the hypertension and ignores a necessary causation for it. It is also assumed that stress alone can induce sclerosis in healthy blood-vessels—a conception that lacks adequate support.

Now the real question is not one of mere relation between hypertension and nephritis but rather of causal relation. It seems to me equally improbable that hypertension is induced by the increased vascular resistance of a sclerotic kidney or that hypertension initiates through strain a sclerosis of the blood-vessels which in turn results in renal sclerosis. There is a third possibility, namely that the hypertension and the renal degeneration are both alike produced by a primary remote factor, a type of intoxication.

The idea of a primary toxin which effects both vascular hypertension and structural changes in the kidney is a purely tentative hypothesis. But it has for its support at least two significant analogies: (1) The immediate etiologic factor in eclampsia is not known; the disease has the hallmark of an intoxication. There are two signs invariably present in the intoxication of pregnancy and eclampsia, namely elevation of blood-pressure and albuminuria. In favorable cases both of these disorders disappear as the patient improves. In other words the disease is functional in that there is no permanent change in organic structure. (2) The other condition which is significant to me is the acute glomerular nephritis which is not an unusual complication of diphtheria and scarlet fever. In the severer types of this type of nephritis there is a considerable elevation of blood-pressure. This hypertension appears along with the other signs of nephritis and abates promptly when the nephritis subsides. Now in both these diseases, eclampsia and acute

nephritis, there is an association of vascular hypertension and renal disorder but no one has suggested that the renal factor is secondary to the hypertension. In eclampsia at least both are regarded as the expression of an intoxication, in the same way that headache and convulsions are evidences of, intoxication. The difference between the two diseases which are cited as analogues, seems to be one primarily in the nature of the toxic agent; one is metabolic in origin, the other bacterial.

In assuming a primary toxic factor for nephritis and hypertension we do no violence to known facts, and there is this advantage that the hypothesis is in accord with conceptions of hypertension which have no relation to renal disease.

From a purely practical point of view this conception of vascular-renal disease as primarily an intoxication, has, I think, evident advantages. It brings us back to a search for causes. It is not sufficient in a case of simple albuminuria, for example, to prove to our satisfaction that the kidneys are functionally adequate to the demands of the organism. Albuminuria is abnormal and the mortality in this group called "simple" is higher than the average for the age. It gives definiteness and direction to our searches for a cause if among other known causes we include intoxications of bacterial or metabolic origin.

The cases of albuminuria without signs or symptoms of organic disease present a very important problem. In some cases at least they represent the period of functional disorder preceding detectable organic change; the period most promising for restoration to normal—a state never attainable once structural degeneration is established. The majority of cases in this group learn of their disorder through life insurance or health examinations. There is no sign of abnormality, perhaps, other than persistent albuminuria. The blood-pressure and renal tests are normal and there is no detectable evidence of early arteriosclerosis. Judged in the light of subsequent histories the causal factors in the majority of these cases were either infection or faulty diet. Orthostatic albuminuria is infrequent. Of course it is seldom possible to state at once after study of a case the exact cause of the trouble. It seems possible to do this only when the correction of a definitely pathological state is followed by complete remission of the albuminuria. The infections found are of all sorts, teeth, tonsils, sinuses, gall-bladder, appendix, fistula in ano. But I would not leave the impression that the removal of an infection is invariably followed by cure. Several cases in my series have had definite in-

ected foci removed to no avail. One man had appendectomy on my advice eleven years ago, since then his gall-bladder had been removed on account of stones, several teeth drawn because of definite abscesses and last year his tonsils were enucleated. The tonsils were mere sponges impregnated with pus. It is of significance that while he has maintained fair health his physician states that in addition to albuminuria there is now persistent though moderate hypertension. Perhaps the most important infection was left till last. It is difficult sometimes to evaluate the importance of these lesions.

In the group where faulty diet seemed to be the predominant factor a striking fact is the number of individuals who were definitely over weight. This invites speculation. But it is sufficient to say here that there are two ways in the main of correcting dietary faults in vigorous persons, decrease of food or increase of exercise. Excesses in protein food seems definitely harmful to some individuals.

Only a word in passing is necessary concerning orthostatic albuminuria. Usually it is easily recognized if one but remembers the possibility. The dependence of albuminuria on posture, its subsidence on rest in bed and the suggestive asthenic habitus of a majority of the cases are salient points in diagnosis. There is however, a source of error. It is well known that excessive exercise induces albuminuria in vigorous individuals. Now if a person be asthenic or under par from fatigue, even moderate exertion may be followed by albuminuria. This fatigue albuminuria will be detectable in urine voided late in the day and absent in morning specimens. On that account there is a possible source of confusion with orthostatic albuminuria.

It seemed to me worth while to dwell a little on albuminuria, not because it is an important sign of nephritis but rather because it is a renal sign of some general disorder. And it is better to accept our problem in its larger significance. Then too there is a dangerous tendency to belittle albuminuria since it has lost standing as a sign of nephritis. Physiological albuminuria is a dangerous term. Albuminuria is never a sign of health.

There is another cause for albuminuria which merits remark because it seems to be so often overlooked. In the late secondary stage of syphilis a pronounced albuminuria is not uncommon. Probably this indicates a real nephritis of mild degree, although symptoms pointing to the kidney are exceptional and renal tests but seldom, in my experience, demonstrate functional impairment.

The manifestations of syphilis are notoriously variable, and sometimes not detectable, there being only the history or perhaps the Wassermann reaction to suggest the diagnosis. Having syphilis constantly in mind as we do in relation to every obscure disorder it is surprising that it seems ever forgotten as a cause for renal disease.

There is no sharp line to demark the toxic and infective albuminurias already mentioned from the more definitely renal diseases which we call nephritis or nephrosis.

We make classifications to suit some convenience, but etiological differentiation is not yet possible. It seems to me a difference in degree rather than a difference in kind of disorder. With the severer degree of involvement we find functional impairments, either with respect to water excretion, salt excretion, or to both. When this impairment transgresses physiological needs then edema develops. In pronounced cases demarked by edema, oliguria, albuminuria, and a concentrated urine the diagnosis is easily made. Sometimes, however, it is not at once readily established whether the disease is primarily cardiac with renal signs due to passive congestion. This question is more apt to arise when there is only slight edema. Much has been made of the differentiation of these two conditions, nephritis of the water retention type and passive congestion of the kidney.

In the vast majority of cases there is no difficulty in differentiation provided the examination of the heart be searching and combined with a knowledge of normal and abnormal cardiac function. If the heart be of normal size, normal rhythm and have normal sounds it is probably a normal heart. If in addition it is possible to secure an electrocardiogram and this be normal then the cardiac factor may be dismissed. The real difficulty arises when it is known that the heart is not normal and also that there is some degree of renal disease. Then the endeavor to estimate the relative significance of those two factors becomes a nice question. It is too, purely an academic question, since renal function depends on circulation and the state of every renal cell depends on the circulation of blood for nourishment and oxygen.

The establishment of the diagnosis of nephritis of the salt-water retention type, or nephrosis depends not only on the evidence of salt and water retention, low blood-pressure, and absence of evidence of arterial disease, but one must exclude nitrogen retention. If there are evidences of nitrogen retention, or of defective phenol-sulphonephthalein excretion then the disorder is of a

mixed type. It is well to keep this in mind since this type of nephritis may progress into the typical nitrogen retention type. If this fact is overlooked and the first diagnosis not reviewed at intervals it may happen that a mode of treatment suited to the early period of the disease becomes actually detrimental some weeks later. This is not a rare sequence and I have known it to cause humiliation when the first warning of the transition was an uremic convulsion.

The commonest type of chronic nephritis is a disease of insidious onset. We seldom see cases in the earliest stages of the disease or perhaps it is we do not recognize them when we do see them. Certainly demonstrable nephritis may exist for considerable periods before symptoms develop. The earliest cases that have come to my attention have most often been referred for one of the following reasons, hypertension, retinitis, albuminuria. The individual had not regarded himself as out of health. These signs, hypertension, retinitis, albuminuria, along with ease of fatigue should be always regarded as signs of suspicion directing toward a careful study of the vascular-renal system. But I wish to insist that any diagnosis should be broad and comprehensive of the whole individual and not confined to an attempt to visualize the state of the glomeruli in the kidneys.

In so far as vascular-renal disease is concerned we must determine the condition of the blood-vessels, the heart, and last of the kidneys. The state of arteries of the extremities is notoriously unreliable as a criterion of the condition of the arteries in general. On this account an examination of the retina is of first importance. Not only may there be clear evidence of arterio-sclerosis but the whole clinical history may be disclosed in typical neuro-retinitis. Retinal examination is especially valuable in young individuals since the purport of arterial disease is then clear.

Reference has already been made to the necessity of excluding cardiac disease in the diagnosis of nephritis. Cardiac hypertrophy may occur without evidence of any disorder of function. When there is no evident cause for hypertrophy such as a valve lesion or hypertension then this enlargement or pronounced left ventricular predominance in the electrocardiogram, is a sign to be given due weight along with other signs in arriving at an estimate of chronic renal disease.

Of the tests directed specifically toward estimating renal function, the determination of the non-protein nitrogen in the blood is the only one which can be clearly definite. A marked increase in the non-protein nitrogen is a demonstra-

tion that the kidney is taxed beyond capacity. It matters not whether the increase of waste products occur in acute yellow atrophy, decompensated cardiac disease, or nephritis, their failure of excretion can be interpreted in no other way than as deficient kidney activity. When there is a considerable elevation of the blood urea, or non-protein nitrogen, above normal and when there is no evident cause for this, other than renal disease, then nephritis is demonstrated. But the converse is not true. Normal blood chemistry does not exclude severe nephritis. Under some circumstances the retained waste nitrogen is held in the tissues and then the blood analysis is misleading. Again, it may happen, that by reason of digestive upset or loss of appetite the patient abstains from food and the blood nitrogen falls. When there is edema and water retention the blood is diluted and the actual concentration of nitrogenous waste as expressed in milligrams per 100 c.c. of blood does not reveal the true degree of retention. These considerations explain why uremia may occur even when the blood urea is apparently normal. It is necessary to bear in mind the various factors which may influence the total metabolism if we are to avoid errors of interpretation of all of these laboratory tests.

One of the oldest observations on chronic nephritis is to the effect that the volume of urine is increased and the concentration decreased. And it was noted years ago that the night urine tends to exceed in volume the day urine. From these earlier observations the concentration tests were a natural development. When for any reason the fluid intake is limited the normal individual adjusts to this deprivation by excreting a highly concentrated urine, the specific gravity rising to 1.030 or more and the urea content of such a urine may reach four or even 5 per cent. If on the other hand the fluid intake be limited in cases of pronounced chronic nephritis, the urine concentration is influenced relatively to a slight degree. In practice it is safer to use a diet with minimal amounts of protein if an effort is made to force concentration. I use a diet of cereals (mostly rice) cream, sugar, butter, and some cooked fruit. Only three glasses of liquid (750 c.c.) are allowed for twenty-four hours. In a normal person this test will cause the specific gravity of the urine to rise usually to 1.025 or more, in the pronounced nephritic it may not be more than 1.015. In some cases it is desirable to determine urea concentration as well as the specific gravity of the specimen. This test alike with all others of this type is useful and instructive in many cases. But the idea should not be

held that the ability to excrete urine of high concentration excludes pronounced, even severe nephritis. Once in a while we observe cases where the power of concentration is not significantly impaired even in the presence of fatal chronic nephritis of the nitrogen retention type. We are apt to speak of the failure of concentration in nephritis as though it expressed a physiological law, when in fact it expresses only the usual occurrence. There are exceptions. And in this connection it is worth while observing the effect of any infection with fever upon the urine of definite cases of chronic nephritis. Not very rarely one may observe the specific gravity of specimens to rise to a degree often said to be impossible in renal disease of this type. All our tests must be weighed in a judicial spirit. The phenol-sulphone-phthalein test is a valuable one and when excretion of the dye is much below normal this fact usually indicates nitrogen retention. Still there are a number of cases of fatal uremia reported in the literature with normal excretion shortly before death; the autopsy proving the existence of extreme degrees of granular kidney.

It is an undisputed clinical fact that severe degrees of nephritis are not incompatible with life, provided there be no impairment of the water excretion. What is lost in ability to excrete a concentrated urine is made good by an increased volume of lower concentration. In a real sense this is a sort of compensation adjustment. The ability to meet this compensation, this output of water, is then a test on which prognosis depends to some degree. One need not explain that the excretion of large amounts of fluid involves not only renal function but cardiac function as well. A break-down of either factor induces retention—edema. It is evident then that diagnosis in renal disease is not complete until we know the response of the organism to the work imposed by ingesting an unusual amount of water.

The usual procedure in this test is to have the patient drink six glasses of water during a period of an hour and determine the volume of urine voided during the next two hours. The test should be given in the morning before breakfast. A normal person will void 1000 to 15000 c.c. during the test period and this is true in many cases of nephritis also. Now a test of this sort imposes a considerable burden upon the heart. But the prognosis in renal disease depends on our ability to estimate the several vascular factors quite as much as upon the renal factors. In a case of nephritis where the excretion of nitrogen waste requires 50 per cent increase in water excretion,

all may go well for a considerable period, but if the heart weaken then the urine volume falls, nitrogen waste is retained and uremia develops. Thus there are cases of uremia precipitated by cardiac failure.

There are many topics relative to vascular renal disease which I should like to touch upon but they are remote from diagnosis: heredity and predisposition which seem ever to crop out no matter how we may strive to ignore them, the fact that nearly half of the cases of vascular-renal disease are over weight; the relation or possible relation to diet, since certain races with fixed diet habits seem less disposed to these diseases than others. All these fundamental problems are at present hardly formulated and await future study.

In conclusion, I wish to emphasize that the diagnosis of vascular renal disease is never the simple question of a few routine tests. The normal man possesses at least twice the renal tissue required for his extreme demands. To detect the onset of disease before structural change has endangered the irreducible minimum of tissue required for health demands of us a different point of view than the one to which we are accustomed. It is only the early recognition of chronic disease before organic degeneration has impaired function that promises some actual value to the patient.

INTESTINAL OBSTRUCTION*

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Intestinal obstruction treated without operative interference carries with it a mortality of almost 100 per cent; treated surgically about 50 per cent. Authorities agree that the mortality of all other abdominal surgery is gradually growing less, but that of intestinal obstruction is showing very little improvement. This high mortality is due no doubt to the seriousness of the condition, the difficulty and delay in diagnosis and undertaking to do too much at the first operation. We have no control over the seriousness of intestinal obstruction, but we can improve on our diagnosis and we must be content in serious cases to relieve the obstruction and do nothing more.

The cause of death in intestinal obstruction is still a mooted point. According to the writings of Bacon, Anslow and Eppler¹, the three main theories are: First, splanchnic paralysis and

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circulatory shock, second; toxemia of duodenal origin, and third, thirst.

Clinicians must depend upon the experimenters to solve this problem; but by a better understanding of the cause of death we can develop a more rational treatment.

Dr. Harry Zimmerman² in a very interesting article in the March number of *Minnesota Medicine*, comes to the conclusion that the absorption of the toxic material above the obstruction is the cause of death.

Results of experiments published since, seem to disprove this theory. Bacon, Anslow and Epler, Hartwell and Hognet³ have demonstrated that in the absence of complications, large administrations of subcutaneous saline solution serves to prolong the life of dogs with intestinal obstruction almost indefinitely. McLean, Andrus, Hartwell, Hognet and Beekman arrived, each group independently of the other, at the conclusion that water loss from drainage of the body fluids into the intestinal lumen, above the obstruction, was the cause of systemic symptoms and eventual death. These observers took dogs and kept all water from them until they died.

They found the non-protein nitrogen of the blood rising to concentrations quite similar to intestinal obstruction. Vaughan has called attention to frequent rises in blood nitrogen during the last stages of severe peritonitis. Myers reports similar rises in unfavorable pneumonia. To quote these observers further, "It seems clear from an experimental standpoint that water deprivation is the most important, if not the sole factor in the production of the pseudo-uremia of intestinal obstruction. Waste nitrogen increase in the blood is prevented by an assured water supply during obstruction or is produced in the absences of either obstruction or a pre-existing nephritis by severe water loss. Renal changes are undoubtedly present, but must result largely from the almost total absence of available water and the high concentration of the waste products in the blood. The diminished urinary output of intestinal obstruction is undoubtedly traceable to the large intestinal output of water and the resultant dehydration. Viewed in this light, the condition becomes a pseudouremia of thirst rather than of intestinal obstruction."

The etiology of intestinal obstruction is extremely variable. Tumors such as tuberculosis, carcinoma and syphilis are easier recognized, because the symptoms are more characteristic and the findings more definite. Tuberculosis is found most frequently in the lower end of the small intestine, carcinoma most frequently in the lower

end of the large intestine, and syphilis in the lower end of the sigmoid or rectum. Intussusception is the most definite pathological condition in obstruction but even that varies in its location. A simple strangulated hernia which is reduced or operated upon before there is any injury to the bowel can be hardly considered an intestinal obstruction. Quite a number of strangulated hernias are reduced without any treatment whatsoever, and these cases should not go down in our reports as a cure of intestinal obstruction.

One of my cases of obstruction showed a different pathological condition than anything I can find described. When we opened the abdomen to do an enterostomy, the ileum was as large as my forearm and very red. The ileostomy did not drain. At postmortem the ileum was dilated and inflamed for about eight feet. We could find no cause for the condition. Dr. Ernest Sterner, who studied the case with me, thought the dilated ileum was comparable to a dilated stomach. The treatment of this case will be referred to later.

We must not forget that benign tumors such as lipomas and fibromas, may cause an obstruction.

Foreign bodies in the intestinal canal may give the greatest surprises as cause of intestinal obstruction. Balls of hair may cause an obstruction. Mental cases swallow various things trying to commit suicide. Some people have an obsession to swallow many different things, such as nails, screws, spoons, etc., this also applies to domestic animals. A penholder in the cecum gave symptoms which were difficult to differentiate between a suppurative case of appendicitis and an intestinal obstruction. After the penholder was recovered at operation the patient said he was using it to dig hard feces out of the rectum when it became lost in the bowel.

The following case came under observation two years ago. We operated for double pyosolpinx. A small cigarette drainage tube was inserted in the posterior cul-de-sac. This was removed the second day. The wound kept discharging a little. With a wound that does not heal after a few months, the important thing we should consider is a foreign body-sponge. After waiting six months for the wound to heal and that is none too long, we re-operated. In going into the abdomen I opened into the bladder and there I learned a lesson. The bladder no doubt became distended the first twenty-four hours after the first operation, and became attached to the line of sutures and grew there. The top of the bladder when I opened it was almost to the umbilicus. Since that I saw another surgeon open into the bladder in the same way. The

tumor mass we felt was an ovarian cyst as large as an orange. After carefully searching for a sponge or compress, none was found. The fistula which led to the colon we attempted to close but failed. Two months later she developed an intestinal obstruction which was puzzling. The bowels would be obstructed for two or three days with severe pain, vomiting, constipation and distention and then they would move. With a barium enema the x-ray showed a complete obstruction about eighteen inches above the rectum. We opened the abdomen and found a mass in the sigmoid. Opening into the bowel we removed a compress which had caused the intestinal fistula and later the obstruction. Then we did a side to side anastomosis and after a stormy convalescence the fistula healed and she left the hospital in good condition. The bowels move without difficulty, but she still has quite severe gas pains at times. The colon literally swallowed this compress. When we took the compress out of the bowel it was not attached in any way. It moved freely in the intestinal canal and this explained the character of the obstruction.

The symptoms in an uncomplicated case of acute obstruction are more severe than in the chronic form. Pain is the first symptom. It is colicky in character, but only lasts a few hours. This pain is due to an arrested peristaltic wave and subsides when the muscular layers of the bowel are exhausted. When the peristaltic wave can no longer take the intestinal contents through, reverse peristalsis starts the intestinal contents backward and then the patient begins to belch up gas. Along with the pain there is more or less shock. There may be some anxiety, there may be none. Following the eructation of gas the patient vomits first, the stomach contents, then the intestinal contents, and finally feces, especially if the obstruction is low down in the bowel. I think more important than the constipation is the fact that no gas passes. The gas takes up more space and moves around more in the gut, therefore causes the greatest amount of discomfort. Increased peristalsis may be seen early, but is not so common as in stenosis of the bowel. In uncomplicated cases there is no fever and leukocytosis. As the disease progresses the pain decreases but the distention increases. The more fluids taken by mouth the more persistent the vomiting. The urine is very scanty, usually some albumen. A. J. Ochsner⁴ says, "A variety of acute ileus is the so-called strangulated ileus in which not only is there obstruction of the fecal current but also interference with the blood supply and nutrition of the intestinal wall which quickly leads to gangrene, necrosis and

early death." He goes on to say the severity of this form is in direct proportion to the vascular involvement. In this class of cases, in which intussusception is an example, we must first remove the gangrenous portion and then do an anastomosis. Enterostomy or colostomy is contraindicated under these circumstances.

Since I wrote this paper we had a case of intussusception in a nine months old baby. We made the diagnosis on three symptoms—pain, vomiting and bloody stool following an enema. The interesting thing about this case was the cause of the intussusception. There were many enlarged lymph glands—probably tuberculous; about two inches from the ileo-cecal valve was a thickened, indurated area in the wall of the ileum, which we thought was the cause of the obstruction.

The symptoms of the more chronic form of obstruction or a stenosis of the bowel, are easier to elicit. In the first place the patient is not so ill and we have more time for study and the x-ray can be used often to locate the exact location of the obstruction. In the acute form the barium test meal might be dangerous (C. H. Mayo). The colicky pains come at more regular intervals and continue from day to day. A distinct peristaltic wave over the tender area is pathognomonic of a stenosis, either in the bowel or at the pylorus. The increased peristalsis is able to force some gas and other material through the stenosis so long as the obstruction is not complete. The urine is scanty and the amount in twenty-four hours is a fair measure of the amount of obstruction. A patient passing ten ounces of urine has an obstruction of about three-quarters of the lumen of the gut i. e., in the absence of any kidney or heart lesion. This we can prove best by a stenosis at the pylorus. One of our patients had an annular stenosis of the pylorus due to a contracting ulcer. He was passing but twenty ounces of urine in twenty-four hours. The first twenty-four hours after we resected the ulcer, with a small intake of water, he passed a hundred ounces of urine. Dr. Quervain⁵ says a buzzing sound at the site of the obstruction, when we press this portion of the gut, is pathognomonic of intestinal obstruction. In a stenosis of the bowel we may have alternating constipation and diarrhea.

The diagnosis of intestinal obstruction may be so easy that it can be made from the history over the telephone, or it may be so difficult that it is impossible to make it till the abdomen is opened.

When there is a history of hernia, the diagnosis is usually easy. One of the most difficult differential diagnosis of intestinal obstruction is one following localized peritonitis such as suppura-

tive appendicitis. Since this condition is being successfully treated with a ileostomy the condition is easier dealt with.

Last year I saw Dr. Kramer of the City and County Hospital post a woman about sixty years old who had been brought into the hospital with all the symptoms of intestinal obstruction. The patient was in extremis and died within a few hours after admission without any operative interference. He found some of the mesenteric veins thrombosed but no obstruction.

Dr. Ernest Sterner saw two cases of pernicious vomiting of pregnancy, which had been diagnosed intestinal obstruction. One was ready to be operated upon. Both recovered after the uterus was emptied. A large ovarian cyst with a twisted pedicle can give almost an exact picture of intestinal obstruction. A stone in the ureter can resemble this condition so closely that a differential diagnosis is very difficult. The following case will illustrate this point. This man had intense pain on lower abdomen, vomiting and passing absolutely no feces or gas. This went on for four days. The abdomen was very distended, secreting very little urine till he passed a urethral stone. Here is another case that might have been operated upon for intestinal obstruction.

The following case was under our care this spring when a differential diagnosis could not be made at the time. This woman, eighteen years old, was six and one-half months pregnant. Her illness began like a case of gastrointestinal influenza. On the fourth day she had a chill for twenty minutes and the temperature rose to 102°. After that she had a chill daily. We were unable to get her bowels to move. The pain started over McBurney's point, later it was in the region of the gall-bladder and still later down in the left lower quadrant. By this time she was very ill. With repeated consultations we were unable to decide whether it was an obscure intestinal obstruction, a retroperitoneal appendicitis, a mesenteric thrombosis following the influenza or some complication with the pregnancy. On the eighth day she began to have labor pains and was delivered in about twelve hours with a temperature of 103°, pulse 120°. The placenta showed one vein about six inches long on the margin that was thrombosed. The entire placenta was very friable. The pathologist's report was an inflammatory degeneration throughout the placenta. The influenza had caused a septic thrombosis of one of the placental veins which terminated labor. As soon as the fetus and placenta were delivered the temperature and pulse went to normal, like the crisis in pneumonia, and remained there, but un-

til we saw the placenta it was not possible to make the correct diagnosis.

For many years it has often occurred to me how similar a general peritonitis is to an intestinal obstruction. In both cases we have vomiting of black foul smelling material, rapid pulse, distended abdomen with the passing of no gas or feces. In other words a peritonitis has all the earmarks of an inflammatory intestinal obstruction.

I remember how worried I was when a suppurative appendicitis developed an intestinal fistula, but only to find the patient better the next day and after that make a less eventful recovery.

In 1910 I operated upon a young girl for suppurative appendicitis. She was extremely ill. The temperature was high, with the abdomen extremely distended. She was vomiting foul smelling fecal matter. Twenty-four hours after the appendix was removed she developed an intestinal fistula. The next day she seemed to be better. She immediately stopped vomiting, the fever reduced gradually and she recovered slowly but the fistula was about six months in healing. Six years afterwards this same girl came down with typhoid fever. She was again very ill; high fever, diarrhea and distended abdomen. At the end of the first week this old intestinal fistula opened up and with this the abdomen became less distended, the diarrhea stopped and the temperature reduced somewhat. After this she made a normal recovery. I feel that nature's enterostomy in this case made two serious illnesses lighter and may have saved her life. The point I want to bring out in this case, is that it was the gas that was causing the trouble and I believe that is the case in both intestinal obstruction and peritonitis.

In discussing the treatment let us consider first the most serious cases. No case is too sick to operate upon, just as no patient is too sick to have their stomach washed out. The preliminary treatment we use is a hypodermic of one-fourth grain of morphine for an adult one hour before the operation. I am not afraid to give morphine to adults with intestinal obstruction either before the diagnosis is made or afterwards. These patients need rest and morphine gives it to them. Wash out the stomach on the operating table and have the hypodermoclysis, or better, the intravenous injection of normal saline ready to be given as soon as the operation is started. Local anesthesia works beautifully in these cases. The sicker the patient the less anesthesia necessary. No anesthetic is used in the bowel as it is not sensitive. The left muscle splitting incision used as against the left rectus and the first presenting

part of the ileum is picked up for the enterostomy. No exploring is done whatsoever and nothing attempted but to relieve the obstruction. It is much better to do two or three operations at different times than to attempt to do too much at the first one.

C. H. Mayo⁶ says: "The inestimable value of enterostomy, when the operation is indicated, is apparently not appreciated by the profession." He recommends Coffey's method of doing an enterostomy as follows: "Coffey makes a longitudinal incision in the bowel about an inch long opposite the mysentry. The incision extends to the mucosa. At the lower end of the incision the mucosa is opened and a male catheter is inserted in the lumen of the bowel for three or four inches. A single suture is passed through the catheter, fastens it to the intestine. Then the wound is closed in layers." Many methods are used which suit the individual operator, but a catheter or rubber tube has the advantage of allowing feces and gas to pass at once and then the bowel can be irrigated, which is also important. A warm normal saline solution can be used while the patient is still on the operating table. This removes the liquid stagnant stools and allows the gas to pass away. Often with a sick cyanotic patient one can see the color improve and the pulse pick up in volume. We wash out the stomach every six to eight hours with one gallon of warm boric acid solution. The stomach tube should be immersed in ice water. Do not leave the stomach washing to some inexperienced person but do it yourself.

Just as soon as the bowels begin to move the patient will relish liquids by mouth, when before the operation even water was nauseating. It is also surprising how these patients take proctoclysis after the enterostomy or colostomy. After the operation one-sixth grain of morphine hypodermatically every eight to twelve hours is enough to control the pain and give them the much needed rest. Liquid nourishment is given by mouth as soon as the water is well borne. In three or four days the tube will come out and if the bowels are not moving in the natural way, there will have formed an intestinal fistula, which will take care of the stools. If the skin becomes excoriated it can be covered with vaseline.

The treatment of obstructing tumors of the bowel such as tuberculosis, benign tumors and carcinoma are not so hazardous, consequently we can take more liberties with them. With tumors we make the incision as near over the area as possible. This can be done either with local or

general anesthesia. In children it is better to use a general anesthetic. When a side to side anastomosis can be done just above and below the tumor, this makes a less complicated case than doing an enterostomy or colostomy. The tumor can be removed in about two weeks. Referring to the treatment of my own case with the enlarged ileum, I know now that I should have made my ileostomy high above the swollen part of the intestine. Then it would have drained. Dr. J. E. Summers⁷ in the Year Book of Surgery, 1920, says: "If the patient is vomiting fecal matter make the enterostomy as high up in the jejunum as recognizable." That is what I should have done in my case. After an operation we ask the nurse if the bowels have moved. She says, yes, some. Has the patient passed gas? If gas passes there is no obstruction.

J. B. Murphy says we meet a dynamic or post-operative ileus oftener than any other form of obstruction, but A. J. Ochsner says since he began to wash out the stomachs of his operative patients he has never seen a case of post-operative ileus. If an obstruction occurs after any operation, the sooner it is operated the better the chances for recovery. Erdman and others are now doing enterostomies for general peritonitis with remarkable success. Malignant tumors of the bowel which are inoperable should have a side to side anastomosis and not a colostomy, being careful that the peristaltic wave is not reversed in either position of the bowel.

In conclusion:

First—Wash out the stomach every six to eight hours till all nausea and vomiting have disappeared.

Second—In intestinal obstruction, if death in uncomplicated cases is due to thirst, we must get liquids into the body by hypodermoclysis, intravenous injection, and proctoclysis.

Third—In obstruction it is more important to know that the patient has passed gas than feces.

Fourth—Treat general peritonitis as an intestinal obstruction because in every case of general peritonitis there is an obstruction.

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GIFT TO THE IOWA STATE UNIVERSITY

There are many men practicing medicine in Iowa who received a part or all of their medical training at the University of Iowa Medical School and have a feeling of pride in the institution that gave them their inspiration. Whether or not former students of the University, there must be a feeling of satisfaction, that the University Medical School has gained a place in the front rank of medical colleges. We may look back to the days of Peck, Middleton, Robertson and their associates, and sympathize with their struggles and sacrifices in laying the foundation of a medical school in Iowa, which within two generations, indeed, within the memory of a few still living, has come to occupy rank equal to the famous universities of the land. There were many difficulties in the way of developing a great medical institution at Iowa City but they have been overcome. Slowly our medical school has passed from one stage of development to another under the administration of earnest and skillful men, until it has attracted the attention of the foremost men interested in medical education. Now after a most searching examination, it has been found worthy to participate in the benefit of funds provided by great foundations and boards of education for teaching institutions which promise to confer benefits on the general public.

We earnestly urge our readers to examine the letter from President Jessup and inform them-

selves of the provisions and conditions of the gift pointed out. We desire to call attention to the fact that the gift was not made until President Vincent and Abraham Flexner had made a careful investigation of the work of the medical school and found it worthy of the highest commendation. This should be an inspiration, particularly to the alumni, and also to all other practitioners of medicine in Iowa to make a special effort in the interest of the University.

We should for the time, at least, forget all the questions of methods or medical practice, which have so much disturbed us, and concentrate on the one great question of developing our Medical University. How much the acceptance of this gift will mean to the Iowa medical profession, I need not say. It will be clear enough when you read President Jessup's statement. We have lived long enough to know how difficult it is to convince a legislative body of the necessity of appropriating large sums of money. It is refreshing to know that recent Iowa legislators have been reasonably liberal when the object is clearly and definitely stated. We must, therefore, urge every medical practitioner to provide himself with very definite knowledge as to what this money can do, and how necessary it is to keep our medical school in the high place it has reached by the untiring efforts of a devoted faculty. We should not fail to discuss the matter with our member of the house and senate, not by letter only, but personally.

Iowa City, Iowa, December 23, 1922.

My Dear Dr. Fairchild:

Two great foundations chartered by Act of Congress to distribute funds contributed by Mr. Rockefeller have in recent years given millions of dollars to further educational service. This money has been granted on a contingent basis, chiefly to privately endowed colleges, such as Harvard and Johns Hopkins. Much has been given to the smaller colleges, such as Grinnell and Cornell. Foreign schools in Belgium, China, South America and England, have received much assistance. Two state universities, Colorado and Oregon, have also received gifts from these agencies on the same basis.

Our hospital and medical laboratories at Iowa City are so crowded that it has become apparent that a complete new plant must be built. The new wings of the Children's and the Psychopathic Hospitals have been erected on a site selected to the development of this new plant. Nearly 20,000 patients have been admitted under the Perkins and Haskell-Klaus laws alone.

Facing the problem of the great cost involved, the Iowa State Board of Education decided to present formally these needs to the Rockefeller Foundations,

with the request that these philanthropic agencies help in this matter. This formal request was ably seconded by Governor Kendall; the response was magnificent.

The General Education Board and the Rockefeller Foundation now announce a joint gift of two million two hundred and fifty thousand dollars (\$2,250,000) to be made available as soon as the General Assembly of Iowa agrees to appropriate four hundred, fifty thousand dollars (\$450,000) each year for a period of five years, to supplement the gift, to the end that the new hospital and medical plant may be started immediately.

This means a saving to the state of fifty cents on the dollar.

Iowa is chosen as the recipient of this enormous gift because of its success in administering education in general, and medical and hospital education in particular.

An European commission reported, two years ago, after a tour of medical colleges in this country, that the Iowa College of Medicine ranked as one of the best three in America.

It is to be hoped that no time will be lost in meeting this condition, so as to enable the State Board of Education to utilize the funds made available by the foundations and thus save a full year on the completion of the plant.

The long and short of this thing is that this gift comes in the "nick of time," as the present long waiting list for admission to the hospital and medical college insistently demands attention. We are lucky at this moment to be able to save (fifty cents on the dollar) two and a quarter million dollars on the job.

There are no "strings" to this gift, the only condition being the obligation to vigorously go forward with the erection of the plant.

I shall be very glad indeed to furnish any additional information you may desire in connection with this gift.

Sincerely yours,
W. A. Jessup.

HEALING THE SICK BY PRAYER

There seems no end to extraordinary methods of healing the sick. According to an editorial in the Boston Medical and Surgical Journal, "a movement has been inaugurated in New York for the purpose of legalizing an alleged method of curing disease by the laying of hands according to methods employed by Mr. Hickson." It will be recalled that several years ago James Moore Hickson, an Anglican layman, claimed to have effected many cures by prayer and the laying on of hands. He appears to have received the unqualified support of Bishop William T. Manning, then Rector of Trinity Church of New York. During the last three years under the leadership of Bishop

Boyd Vincent of Michigan a Joint Commission to consider the fuller recognition of the Ministry of Healing has been engaged in an investigation of the subject. The commission states that it "confidently reaffirms that God has infinite blessings of power in store for those who seek them by prayer, communion and active trust; that the restoration of harmony of man's mind and will, with the divine will often brings with it the restoration of the body; that the full power of the Church's cooperation has been too little realized; and that confidence in the efficacy of prayer for restoration of health has not been sufficiently encouraged." It is stated at the Forty-Seventh Triennial Convention at Portland, Oregon, that no quarrel is had with doctors, for services of medical science as a "Hand-maiden of God and the Church." We are informed that special gifts of healing must be recognized. There can be no question of the mysterious influence of one unique personality upon another personality and often for good in the case of the sick.

High authority in the Church hesitates to commit the Church to these views in relation to healing the sick, and at the request of the Lambeth Conference of 1920 to the Archbishop of Canterbury to appoint a committee to make a study of the subject, the commission recommended that no formal action be taken at this time.

In view of the present state of scientific medicine all this is absurd enough. But as long as the subject remains a theological question and is confined to ministerial speculation we have no controversy with the great Episcopal Church, but if it is to become a legalized system of medicine we feel as does the Boston Medical and Surgical Journal, that "the people must beware of false teachers, even though they are in high places."

THE NEW APOSTLE OF HEALING

It is strange that the human mind should run so constantly after strange methods of healing the sick and the solving of the mysteries of nature. The general public has become so familiar with the discussion of medical investigations and discoveries, that it is not strange that people are led to accept almost anything that is striking or mysterious and the more striking and more mysterious the claims the more interesting they become.

When it is apparent that the so-called investigation has a commercial bearing, and when the investigator has in mind the accumulation of fees for his own personal advantage it is well to hesitate. There are men in our own fold who for commercial advantage, offer new methods for

easy and certain cure, are eagerly taken up by superficial minds who practice medicine as a trade rather than as a profession. Now comes one Dr. Abrams with a new method; the claims are as follows:

1. Physiologic phenomena are manifestations of electronic energy.
2. Pathologic phenomena are manifestations of perturbed electronic energy.
3. The energy in health and disease has an invariable and definite rate of vibration (determinable by the electronic reactions).
4. Specific drugs possess a like vibratory rate as the diseases for which they are effective.

These like vibratory rates (homovibrations) of drugs owe their efficiency to their inherent radio-activity. Thus, an obsolete drug gamboge, painted on the chest in incipient tuberculosis will effect a symptomatic cure within a few weeks. Gamboge possesses the same vibrator rate as tuberculosis. Our conception that drug action is dependent on direct cellular contact is thus demolished.

5. All forms of energy, whether derived from heat, electricity or magnetism may be made to yield different rates of vibration and these rates corresponding to the disease are utilized for their destruction.

Apparently there are several pieces of apparatus necessary for the proper use of Dr. Abrams' discoveries, the most important of which appears to be the "oscilloclast." These are all for sale except the latter, which can be leased for \$200 or more as a deposit, and \$5 per month rental. This machine is devised to apply the therapeutic principle advocated by its originator.

Many who have leased the "oscilloclast" have testified that they are making large incomes, something like \$1,000 per week or better, and very laudatory reports are given by these, of course, concerning the results.

The "electrobioscope" is also an instrument of many possibilities. It has demonstrated the sexuality of numbers and sounds. It seems that even numbers repel a sort of pith ball suspended by a silken cord, and odd numbers attract. Vowels repel and consonants attract. A hair from a female repels and a hair from a male attracts. Dr. Abrams can determine the sex of an offspring before its birth.

Perhaps the most notable "discovery" of Dr. Abrams, is the "Electronic Reaction of Abrams," the initials of which words, "E. R. A.", it will be observed, together are significant and appear quite modernly scientific. They are used with much evident satisfaction by the disciple of Dr. Abrams in their lay magazine discussions. This new principle in medicine makes it possible to

tell from a drop of blood with what disease the person from whom the blood is taken is suffering. These facts may now be discovered from the autograph of an individual, dead or alive. In other words, Dr. Abrams claims to be able to tell from a drop of blood or an autograph whether an individual has tuberculosis, syphilis, cancer, or any other disease.

The Texas State Journal of Medicine furnishes a short biographical sketch as follows:

Dr. Abrams carries the titles, "A. M., M.D., LL.D., F.R.M.S." It appears that his M.D. degree comes from the University of Heidelberg, Germany. He is also a graduate of Cooper Medical College, having received his degree in that institution the year following his graduation from the University of Heidelberg. His A.M. degree was conferred by the University of Portland. In view of the fact that Dr. Abrams was born in 1864, according to his own statement it would appear that he received his degree from Heidelberg rather early in his career. Doubtless the requirements were not as exacting in 1882, the year of his graduation, as they are at the present time. The propaganda department of the A. M. A. has not able to locate the University of Portland. We do not know where he gets his LL.D., and neither do we know what the F. R. M. S., stands for. It may be said that his claims for educational advantages do not ring true.

It is not difficult to discover the real purposes of Dr. Abrams' investigations and discoveries. It appears that osteopaths, chiropractors and some regular physicians find this an interesting system of practice.

SENATOR ARTHUR CAPPER OF KANSAS

The distinguished Senator from Kansas comes in for some caustic criticism from the Fairmount Sentinel (Minnesota) and by the Journal A. M. A. which we reproduce.

It is to be regretted that a man so distinguished in the United States Senate and the editor of an influential paper, (Capper Weekly) should for commercial reasons lend his publication to mislead the public in carrying advertisement of impossible cures. Senator Capper has so constantly advocated reform measures and high ideals that his advocacy of the worst kinds of quackery comes to us as a shock and must in the future leave a doubt as to his sincerity in any measures he may advocate. He may be indifferent to the views of the medical profession but he should at least respect his duties to the public and have some thought of possible public opinion.

Capper's Weekly, Senator Capper's own personal organ, claims a circulation of 700,000. Senator Cap-

per writes extensively for every issue, and it is touted as "a Champion of Human Welfare and the Square Deal." A recent issue before us contains a lengthy article, over a fac-simile of the senator's signature, in which he expresses deep concern for boys and girls, and in chaste and beautiful English, gives advice which he hopes will save from the allurements of a giddy life and impress them with the importance of studious self-denial and rectitude of conduct.

But in the same paper containing saintly precepts and homilies on right living, what do we find?

Column after column of the vilest, lowest, beastliest, most misleading, deceptive, dishonest and debauching advertisements of nostrums and alleged cures of diseases that are contained in any paper in the United States that is permitted to circulate through the mails.

There isn't a publisher in Minnesota so unscrupulous and grasping as to consider for a second any one of more than fifty advertisements that disgrace Senator Capper's paper and that have defiled its columns for more than a year.

The medicines and cure-alls that are advertised are grossly and cruelly false and delusive and have been black-listed and discredited by every reputable physician in the country.

They appeal only to the poor and ignorant, suffering from maladies which skill and science and accredited diagnosticians are competent to deal with.

Senator Capper is selling his name and fame to the dirty scoundrels who advertise these discredited concoctions which not only do not do one a particle of good, but inflict upon the victims habits and appetites that inevitably lead to ruin and disgrace.

We declare in all earnestness that the class of advertising which the Capper paper contains should not only exclude it from the United States mails, but should ostracize it and its publisher from every respectable household. Any one who questions this statement is requested to procure a copy of the Capper paper and submit the advertisements it contains to a reputable physician.

According to the published rates of Capper's Weekly these advertisements bring Senator Capper a handsome fortune every month. What it brings the deluded victims would hardly dovetail with the paper's motto: "A Champion of Human Welfare."

This paper has no objection to Senator Capper's coming to our state to preach pure politics, but a man who is most shamefully and brazenly humbugging his innocent and confiding patrons is not entitled to the respect and consideration of honest voters.

The Daily Sentinel has for years refused such advertising as is referred to above and, to my knowledge, has turned down contracts that have amounted to thousands of dollars.

R. C. Hunt, M.D., Fairmount, Minn.,
Secretary, Blue Earth Valley Medical Society.

(Comment—The caustic comments of the Fairmount Daily Sentinel caused us to purchase some re-

cent issues of Capper's Weekly. Cures for cancer, epilepsy, goiter, piles, asthma, the whiskey habit, "rheumatism," baldness and ruptures; "weak men" cures, a "Vacuo-Invigorator" ("instrument sent in plain wrapper") the "Bee Cell" uterine "supporter"—these are but a few of the fakes featured in this self-styled "National Weekly of a Great Nation." According to the editorial page, "Capper's Weekly stands for a square deal for all"—and then advertises that if diabetics take "Eksip" they do not need to diet! "Capper's Weekly stands for making prohibition world-wide"—and advertises nostrums whose most potent ingredient is alcohol and containing from 15 to 18 per cent of this ingredient! "Capper's Weekly stands for laws to prevent price gouging"—and advertises a nostrum, for making child birth easier, containing a few cents' worth of oil and selling for a dollar and a quarter! "Capper's Weekly stands for the stripping of waste" from the public service—and perpetuates the most monstrous form of waste known to modern civilization, that of the iniquitous "patent medicine," and obtains no small proportion of its advertising receipts from such perpetuation.—Ed.)—A. M. A. Journal.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES

With the publication of the April number, Dr. George Morris Piersal resigned as editor, a position which he had held for eleven years. Dr. Piersal assumed the management of the Journal on the death of Dr. A. O. Kelly in 1911. Dr. Piersal is succeeded by Dr. John H. Musser, Jr., and Dr. E. B. Krumblaar.

PROTECTION OF SYNTHETIC-DRUG INDUSTRY

The conference committee of the Senate and House on the tariff bill refused to provide for an embargo or prohibitive duties on dyes and the related organic drugs and medicines as requested by the American Chemical Industry. In their first report to Congress, the conference committee restored the embargo provisions, but the House of Representatives refused to accept this provision of the bill and also the schedule fixing a duty of \$30 a ton on potash. Following the refusal to accept these two provisions of the tariff bill, the conferees agreed to a compromise, which fixes rates of 55 per cent on intermediates and 60 per cent on finished coal tar dyes and chemicals, with a specific duty of 7 cents a pound, in each case to remain operative for a period of two years, following which ad valorem rates of 40 and 45 per cent and 7 cents specific are to apply. The House accepted by a decisive vote the amended conference report, and on September 19 the bill as passed by the House also passed the Senate.—Journal A. M. A.

MEETING OF FIELD ACTIVITIES COMMITTEE AND COUNCIL OF IOWA STATE MEDICAL SOCIETY

This meeting was held in Des Moines on January 11, all members of the Field Activities Committee and all except three of the Council being present. Doctor Pearson as chairman of the Legislative Committee was also present.

The following subjects were discussed:

The Inactive County Medical Society, Dr. T. B. Throckmorton.

Sheppard-Towner Law at Work in Iowa, Dr. J. W. Prentice, Division of Maternity and Infant Hygiene for the University of Iowa.

Rockefeller Gift to the University Medical Department, Dr. N. G. Alcock.

Legislation, Dr. W. W. Pearson.

County Public Health Association, T. J. Edmonds, Executive Secretary, Iowa Tuberculosis Association.

The Full-time County Public Health Unit, Dr. James Wallace and Dr. R. P. Fagen, Secretary, State Board of Health.

The Field Activities Program for 1923, Dr. F. E. Sampson, Director.

It was moved that the University be requested to send a copy of the Sheppard-Towner law to each physician in the state, and the Field Activities Committee was directed to write a letter to each physician over the signature of the director, Dr. F. E. Sampson, stating that the operation of the Sheppard-Towner law had no relation to state medicine, that the clinics were diagnostic only, that there was no treatment or private nursing service connected with it, and that there would be no interference in personal privileges or professional services of the attending physician.

It was moved that a letter be sent to President Jessup of the University of Iowa, assuring him of the fullest endorsement and every helpful influence from the State Medical Society in securing the necessary appropriation which will be asked of the legislature to meet the magnificent gift offered to the University by the General Educational Board and the Rockefeller Foundation.

Endorsement was given to Doctor Fagen's proposition regarding his plan for more efficient field work, and there was a particular sympathy expressed for the development of the old time county health officer.

This was the first meeting in which all the officers of the State Medical Society especially concerned with the promotion of better coordination between the State and County Societies and community welfare were assembled for this particular purpose, and it was not only of great interest, but will prove to be of far reaching importance in furthering this new movement which our State Society has undertaken.

FRENCH DOCTOR TO BE TRIED FOR FALSE DIAGNOSIS

According to press dispatches from Paris dated October 6th, the magistrates' court at Evreux, has ordered the trial of Dr. Ballet on the charge of causing the death of a patient through erroneous diagnosis. It is said that Dr. Vallet recently operated on a woman for a fibroid tumor and the operation disclosed the fact that the woman was pregnant. A correctional operation was done immediately and the child was saved but the woman died. Dr. Louis Dartigues, vice-president of the Society of Medicine of Paris, who was called as a witness, expressed his indignation at the decision of the provincial courts, asking by what right infallibility was demanded of the medical profession and not of other professions. —New York Medical Journal and Medical Record.

OTTUMWA MEETING—PRELIMINARY ANNOUNCEMENT

The members of the Arrangement Committee of the Iowa State Medical Society held a meeting in Ottumwa recently, and made a survey of the local situation relative to the annual session of the Society, May 9, 10, 11.

The Hotel Ottumwa was selected as the headquarters, also for the meeting place of the House of Delegates. The general meeting and exhibits will be housed at the Wapello Club, through the courtesy of its members. The club is an ideal place for the general session, readily accessible, well lighted, splendidly ventilated, and apparently so situated as to be free from disturbing street noises. The Section on Ophthalmology, Otology and Rhinology will hold its meeting Thursday, May 10, in the Orchard Room of the Ballingall Hotel.

Thus far, everything points to a favorable meeting, and the local members of the Arrangement Committee are unsparing as to their time and talents in the endeavor to do everything in their power to bring to a favorable fruition such plans as will make for the comfort and convenience of the visiting profession. Owing to the rather limited hotel facilities, the local hostelrys will be taxed to the utmost but no effort will be spared by the Housing Committee to care for all visitors. It will be well, however, for those anticipating attendance to write for reservations early.

The Scientific Committee, also, are pleased at this time to announce that Dr. M. L. Harris, of Chicago, will be one of the guests of the Society and will deliver the Address on Surgery, while Dr. C. F. Hoover, of Cleveland, distinguished for the work he has done along the line of Internal Medicine at the Western Reserve University, will deliver the Address on Medicine. Papers by other physicians, both in and out of the state, have been promised, and everything points to a successful, entertaining, highly scientific, and profitable meeting. Keep the dates in

mind, May 9, 10, 11; begin to arrange your work so as to get away in time, and come to Ottumwa, prepared to digest and assimilate the scientific pabulum which will be placed at your disposal in May.

Tom B. Throckmorton,
Secretary.

Dr. D. S. Fairchild.

In the October Journal, page 418, you publish a notice of a recognition given to Dr. Harvey Cushing in being invited to take over the directorship of the surgical unit of St. Bartholomew's Hospital, London, for a period of ten days in the month of June, 1922.

I wish to call your attention to a further compliment extended to him by the medical faculty of St. Bartholomew's Hospital during his visit, that I believe he will appreciate even more highly than the honor aforementioned. At the close of the above service, Doctor Cushing was elected a perpetual student of St. Bartholomew's, and asked to inscribe his name on the students register of this venerable institution. This is a rare distinction, coming from "Barts" the oldest hospital in the world, celebrating its 800th birthday in June.

Sincerely yours,
WALTER L. BIERRING.

SYPHILITIC BACKACHE

Syphilis of the vertebral column, although rather a rare condition, is probably frequently overlooked. Pain is usually the chief symptom. A combination of hypertonicity with a stiff back or with a back showing areas of restricted mobility is regarded as almost certain proof of syphilis of the vertebra. In diagnosis of syphilitic backache care must be taken to exclude all other possible factors producing backache. The Wassermann test is valuable but it must be remembered that it is frequently negative in syphilis of the bone. A Wassermann test of the spinal fluid as well as of the blood should be made. In treating syphilis of the bone, the general principles of the treatment of syphilis should be applied. Cases should be controlled with subsequent Wassermann tests and roentgen-ray examination. Patients with extensive destruction of the spinal column demand the cooperation of the orthopedist. In concluding, the author makes the following points:

1. Backache as a chief complaint may be due to syphilitic spondylitis and although the condition is rare it should be considered as a possibility in every indefinite case of backache.
2. Syphilis may involve any part of the spine; the most frequent location, according to the literature, is in the cervical vertebra.
3. The pathology is similar to syphilis of the bone elsewhere in the body. The nervous manifestations depend on the part of the vertebral column involved and the extent of the morbid process.
4. Syphilitic spondylitis presents no definite clinical picture, the diagnosis being made chiefly by:

1. The roentgen-ray.
2. Evidence of syphilis elsewhere in the body.
3. The Wassermann test.
4. The therapeutic test.—Warren Thompson. American Journal of the Medical Sciences. Vol. clxiv, No. 1, July, 1922.

IOWA STATE UNIVERSITY NEWS NOTES

Don M. Griswold, M.D.

Dr. Fred Hark, resident physician in the department of orthopedics of the State University of Iowa, and Dr. Florence White, resident physician in the Methodist Hospital of Des Moines, were united in marriage. Dr. Fred Hark and Dr. White were classmates being of the class, 1922. Both will finish their work in the respective hospitals.

The student health department of the State University of Iowa finished the latter part of November, the physical examinations of the students entering military training and physical training of the State University.

Dr. Roy Richard Jones, who has been here on a leave of absence from Panama, C. Z. where the Doctor is on the staff of the Santo Thomas Hospital, left recently for Ft. Collins, Colorado, accompanied by his wife and baby daughter. After a month's visit with the Doctor's parents and other relatives, they will return to Iowa City. There they will visit Mrs. Jones' parents, Mr. and Mrs. Earl Custer, before returning to the Zone. Mrs. Jones was formerly Miss Irene Coey Custer, and was graduated from S. U. I. in 1917. Dr. Jones is an alumnus of both the Colleges of Liberal Arts and Medicine, 1917 and 1919, respectively.

The laboratory for the State Board of Health report that during the last month, eighteen throat cultures have been received without the name or address of the physician submitting the specimen. Such specimens cannot be reported upon, although the report is ready and waiting for identification.

Dr. Don M. Griswold, professor of hygiene and preventive medicine accompanied Dr. Wm. H. Wallace of the International Health Board visited Appanoose and Monroe counties, with a view to establishing "county health units" there. Meetings were held with the local medical profession and a plan to work outlined. This work is heavily subsidized by the Rockefeller Foundation, and similar proposals will be made by several other counties.

Dr. L. W. Dean, dean of the College of Medicine is going to attend the Council of the Triological Ophthalmological, Otological and Rhinological Society in New York, to pass upon policies for the coming year and make arrangements for the annual meeting to be held later.

A complete social service bureau has been established in connection with the eye, ear, nose and throat clinic of the University Hospital. Miss Nellie Morris and Mrs. Pearl Kamerer are in charge of the work.

Dr. E. M. Medlar, pathologist for the Metropolitan Life Insurance Company, called on former associates here recently. His visit was to give lego-medical testimony.

On December 4, Dr. L. W. Dean, professor of head specialties, held a round table discussion before the Otological Society of Chicago.

Dr. J. J. Lambert, professor in the College of Medicine, State University of Iowa, won the golf championship of Iowa City and Iowa University recently on the Country Club links. The contest for first place has been on for many days and weeks. The runner-up was city solicitor Donald McClain, who was in fine form throughout the 1922 contest and came in close second. Dr. Lambert won 5 up, 4 to play in 27 holes.

Little Betty Boiler, the five year old daughter of Dr. and Mrs. W. F. Boiler of Iowa City, was knocked down by the fender of a car passing along as she attempted to cross the street. Thrown down with her head striking the pavement, the skull was fractured. Up to the present time the little girl is progressing very nicely and it is hoped that she will recover.

Dr. C. H. Gatewood of Cook County Hospital, Chicago, recently visited his brother, Dr. Gatewood of the University of Iowa.

Dr. C. P. Howard, head of the department of internal medicine, recently presented a paper before a gathering of medical men of Mason City.

Dr. Arthur E. Bence and Miss Clara Beard were married October 27. Dr. Bence is assistant surgeon in the orthopedic department of the State University Hospital and Miss Beard is a graduate nurse at the Children's Hospital, Iowa City.

ANNUAL CLINICAL SESSION AMERICAN CONGRESS ON INTERNAL MEDICINE

The seventh annual clinical session of the American Congress on Internal Medicine will be held in the amphitheaters, wards and laboratories of the various institutions concerned with medical teaching at Philadelphia, Pennsylvania, beginning Monday, April 2, 1923.

Practitioners and laboratory workers interested in the progress of scientific, clinical and research medicine are invited to take advantage of the opportunities afforded by this session.

Address enquiries to the secretary-general.

Frank Smithies, Sec'y-Gen'l,
1002 N. Dearborn Street, Chicago.

SOCIETY PROCEEDINGS

Hancock-Winnebago County Medical Society

The Hancock-Winnebago County Medical Society elected the following officers for 1923: President R. S. Fillmore, Corwith; vice-president, G. E. Snearly, Goodell; secretary-treasurer, L. J. Kaasa, Lake Mills; delegates, R. S. Fillmore and H. F. Thompson.

Harrison County Medical Society

The Harrison County Medical Society met at the gymnasium of the Pisgah school building. Eighteen doctors were present.

Dr. E. C. Junger of Soldier gave a clinic, diseases were Osteomyelitis and Empyema. After the clinic the doctors engaged in a spirited discussion. Dr. Kennedy of Logan gave a talk on "Some of the Conditions We Doctors Have to Meet."

All of the doctors in attendance repaired to the residence of Dr. Cook, where a four-course chicken dinner was served. The next meeting was held at Persia in December. Dr. Cook, Pisgah, president, and Dr. C. A. Heise of Missouri Valley, secretary.

Mahaska County Medical Society

The annual meeting of the Mahaska County Medical Society was held at the Chamber of Commerce rooms, Oskaloosa, January 9. The members' wives, nurses and welfare workers of the county were guests of the society.

Mr. Lewis Law of Burlington was also a guest and gave one of his inimitable addresses; vocal and orchestral music, and a reading completed the program. Officers for the year, as follows, were elected: President, S. W. Clark; vice-president, P. M. Day; secretary-treasurer, R. M. Gillett, all of Oskaloosa.

Polk County Medical Society

The Polk County Medical Society held its annual meeting at Hotel Ft. Des Moines on Tuesday evening, December 26, 1922.

Over two hundred members including their guests were present at the banquet.

The Melo Blue Orchestra furnished the music for the occasion. Following the banquet, President Dr. A. P. Stoner introduced Dr. Walter L. Bierring as toastmaster.

The first speaker of the evening was Judge Martin J. Wade, "The Fight Is On." Second address was by the Rev. F. O. Hanson, superintendent of Iowa Lutheran Hospital on "Hospital Obligations to the Patient." This address was followed by Henry L. Adams, president of the Chamber of Commerce, who spoke on "The Obligations of the Public to the Physician." The last address of the evening was by the retiring president, Dr. A. P. Stoner, who, in a most capable manner, called our attention to "Facing the New Day in Medicine." He also reviewed the activities of the society for the past year, and explained in detail what this society could do for the

betterment of the society and the public in general.

The election of officers for 1923 followed: President, Dr. Chas. Ryan; president-elect, Dr. M. L. Turner; vice-president, Dr. D. J. Glomset; secretary, Dr. H. E. Ransom; treasurer, Dr. E. B. Mountain.

Delegates for the term of two years, Dr. Thos. A. Burcham, Dr. A. D. McKinley. Dr. Chas. Holloway was elected as a delegate for one year to fill a vacancy by the removal of Dr. Meredith Mallory from the city to Florida.

A year book was prepared for the first time by this society. Polk county is the oldest county medical society in the state organized October 24, 1851. The object of this book was to bring to the minds of its members the activities of the society for the year just passed, also a brief historical sketch of the society from its organization to the present date.

H. E. R.

Tama County Medical Society

A meeting of the Tama County Medical Society was held in Traer, Wednesday afternoon November 22. The meeting was well attended. Dr. R. E. Keyser of Marshalltown gave a discussion of "Carcinoma of the Stomach," Dr. L. F. Talley exhibiting x-ray photographs of the various stages of development of cancer of the stomach. There were talks by some of the other doctors present. The next meeting of the society will be held with Dr. Jacob Breid at the Indian Sanatorium. Dr. Breid was present and asked the medical men to be his guests at dinner the next meeting and the invitation was accepted. The meeting will probably be held in April.

Wapello County Medical Society

The program for the Wapello County Medical Society from October 17 to May 1, 1923 has been announced. The meetings will be called to order promptly at 8 o'clock. The outline is as follows:

Officers of the society, 1922 are:

Dr. F. W. Mills, president; Dr. L. A. Hammer, vice-president; Dr. H. W. Vinson, secretary; Dr. J. F. Herrick, delegate to State Medical Society; Dr. W. C. Newell, alternate; censors, Dr. M. Bannister, Dr. E. G. Barton, Dr. E. A. Sheafe; Ottumwa Hospital advisory board: Dr. M. Bannister, Dr. J. F. Herrick, Dr. E. T. Edgerly; program committee: Dr. W. E. Anthony, Dr. F. W. Mills, Dr. H. W. Vinson.

October 17—Backward Children, Dr. R. H. Sylvester, Ph.D., of Des Moines.

November 7—Treatment of Acute and Chronic Urethritis, Dr. F. L. Nelson; Acute and Chronic Endocarditis, Dr. W. C. Newell.

November 21—Diagnosis of Gall-Bladder and Stomach Symptoms, Dr. W. H. Rendleman of Davenport.

December 5—The Therapeutic and Diagnostic Use of the Duodenal Tube, Dr. E. T. Edgerly. The Treat-

ment of Diabetes, Dr. D. McEldery. Annual business meeting and election of officers.

December 19—Fractures of the Skull, Dr. L. R. Wellstead; Fractures of the Spine, Dr. A. O. Williams.

January 2—Clinic, Dr. J. F. Herrick.

January 16—Address, Dr. F. E. Sampson, Creston.

February 6—Thyroid Surgery, Dr. E. B. Howell; Dental Diagnosis, Dr. C. B. Lewis.

February 20—Surgery of the Prostate, Dr. H. H. Moore; Surgery of the Mastoid, Dr. C. B. Taylor.

March 6—Clinic, Dr. D. C. Brockman; Constitutional Diseases as Manifested in the Eye, Dr. D. E. Graham.

March 20—Arteriosclerosis, Dr. L. A. Hammer; Constitutional Diseases of Childhood, Dr. W. J. Herrick.

April 3—Clinic, Dr. S. A. Spilman, X-Ray Treatment, Dr. C. E. Hubard.

April 17—General Anesthesia, Dr. W. E. Anthony; Local Anesthesia, Dr. C. B. Jackman.

May 1—Version, Dr. H. W. Vinson.

The members of the Wapello County Medical Society are: Drs. E. Anthony, W. E. Anthony, M. Bannister, E. G. Barton, D. C. Brockman, E. T. Edgerly, J. W. Elrick, A. B. Fair, D. E. Graham, L. A. Hammer, Wm. Hansell, F. A. Hecker, C. A. Henry, E. B. Howell, J. F. Herrick, W. J. Huband, C. B. Jackman, B. D. LaForce, E. J. Lambert, Eppie McCrea, F. M. McCrea, D. McEldery, F. W. Mills, H. H. Moore, J. C. Moore, F. L. Nelson, W. C. Newell, D. T. Rambo, C. S. Reed, R. F. Shahan, E. A. Sheafe, H. A. Spilman, S. A. Spilman, Maude Taylor, C. B. Taylor, F. E. Vance, H. W. Vinson, J. R. Wellstead, A. O. Williams, and W. J. Herrick.

Wayne County Medical Society

The Wayne County Medical Society met at the Majestic Theatre in Seymour. Twenty-two physicians were present. The following officers were elected: President, Dr. W. G. Walker, Corydon; vice-president, Dr. Corbin Millerton; secretary-treasurer, Dr. G. H. Sollenbarger, Corydon; board of censors: Drs. B. S. Walker, Corydon; G. W. Hinkle, Harvard, and U. L. Hurt of Seymour.

Following the election of officers Prof. O. E. Klingaman, head of the University Extension Department of the State University gave an address, explaining in detail the features of the Sheppard-Towner Maternity bill.

The people of Iowa who are interested in preventive medicine and public health will gather at Cedar Rapids February 14 to 16 for a series of public health conferences including the annual meeting of the Iowa Tuberculosis Association.

The keynote of the meetings will be "Measuring Health Work by Results—in dollars, days and lives." Speakers from out of the state will be Mr. James Minnick, director of the welfare department of the Drexel Mutual Life Insurance Company, Chicago;

Dr. Rachele S. Yarros, special lecturer on social hygiene of the U. S. P. H. S., Washington, and Mrs. D. Pirie Beyea, dental lecturer for Colgate Company, New York.

The organizations participating are: United States Public Health Service, State Board of Health, State Housing Commission, Iowa Sanatorium Association, Iowa Trudeau Society, Housing Bureau, Iowa Tuberculosis Association, and the County Medical Societies of the Fifth District.

Wednesday's program will be devoted to the social hygiene program; Thursday, the program will include sessions on health education, Housing Bureau and general meeting; Friday, there will be a session on public health nursing, a medical session, and an inspection trip to the Oakdale Sanatorium.

MEDICAL NEWS NOTES

Tribute to Dr. Middleton

At the seventieth anniversary of the Rock Island Railway System, a tree was planted at Iowa City in memory of the late Dr. William D. Middleton of Davenport, former dean of the medical faculty of the State University of Iowa and surgeon-in-chief to the Chicago, Rock Island and Pacific Railway, who died, in 1902, of septicemia, following a wound received while performing an operation. Dr. Thomas H. Macbride, president emeritus of the State University of Iowa, delivered an address, wherein he paid eulogy to Dr. Middleton. Following the planting of the tree, Dr. Middleton's daughter, wife of Dr. Samuel C. Plummer of Chicago, who fills the chief surgeonship that his father-in-law occupied, unveiled a bronze tablet dedicated to the physician.—*Journal A. M. A.*

Johns Hopkins Hospital

Dr. John M. T. Finney will fill the position of surgery made vacant by the death of Dr. Halstead until the faculty shall have made a selection of a permanent successor.

A physician can not be held for negligence in the case of a child losing its life by taking medicine intended for another, according to an Associated Press report of a decision handed down by the Iowa Supreme Court.

The opinion was handed down in the case of Carl M. Walker versus Dr. W. B. Chase, which was appealed from the Jasper County District Court. The case when tried here, was presided over by Judge Charles A. Dewey. The plaintiff asked damages in the sum of \$20,000 for the death of a child about three years old at the time. The Walkers reside in Prairie City and Dr. Chase was at that time a practicing physician there, although he has since moved to Des Moines.

According to the testimony in the case at the time it was tried here, Dr. Chase was called to the Walker home to see Mrs. Walker who was ill and

left some tablets which contained poison. The doctor claimed he warned the people in the house of the contents of the tablets and told them to be careful about the small child getting them. This was denied by the plaintiff and his wife when they testified in the trial. Some time after the doctor left the house after leaving the tablets there, the little child obtained the cup in which the tablets were placed and ate some of the tablets. Death resulted. The father of the child brought suit against Dr. Chase in the sum of \$20,000. The case was a hard fought one, the plaintiff claiming that the doctor was guilty of negligence while the defense maintained that the doctor had warned the parents of the danger of leaving the tablets within reach of the child and that the physician could not be held for negligence. This contention was upheld by the high court in its decision handed down recently when it reversed the lower court and remanded the case back for a new trial.—*Newton News.*

Rotarians of Muscatine heard an interesting address given yesterday at the Muscatine Hotel by Dr. B. J. Palmer, head of the Palmer School of Chiropractic at Davenport. Dr. Palmer used as his theme, "Selling Yourself."

Dr. Palmer explained that his long hair which drops to his shoulders, was one of the means of self-salesmanship which he had adopted. He declared that forty-nine of fifty people will notice him on the street, because his long hair is different. Every advertiser, every window decorator, must do the same thing in some manner to be successful.

No man, he said, ever made a success by listening to what "they say." "For years I was laughed at in Davenport, but in Davenport they no longer laugh at me, they laugh with me. Had I listened to what they said, they would have forgotten me by now. Many a brilliant idea, capable of rendering a great service to the world has been lost because he who conceived it listened to the fault-finding criticism of what "they say."—*Davenport Democrat.*

VALUE OF CANCER WEEK

In Des Moines, Cancer Week proved to be of inestimable value to the community.

The principle feature of the program was examinations at the hospitals and the Des Moines Health Center of a large number of people for suspected malignant growths, etc.

The newspapers of the city were requested to announce that the staffs of the various hospitals would examine free of charge those reporting at the institutions between the hours of 8:30 a. m. and 9:00 a. m., during the week for advice concerning growths or other symptoms thought to be cancerous in nature.

The Des Moines Health Center admitted patients for the same purpose in the afternoon of each day.

During the week 235 cases were examined, 79 of which were admitted to the Health Center. All

cases were examined by competent diagnosticians, who kindly volunteered their services for the occasion.

The report of Dr. A. D. McKinley, director of the Health Center, is especially interesting and instructive.

Patients Examined at the Des Moines Health Center
Cancer Week, November 12-18

NEGATIVE FOR CANCER

Case No.	Diagnosis
1101	Acnae Rosacea.
8784	Encapsulated foreign body under skin.
8772	Old scar of lip.
8774	Mucous cyst, lip (?).
8838	Fibrolipoma, multiple, left groin.
8837	Mucous membrane tag, anus.
8832	Vague abdominal pains.
8830	Sebaceous cyst, scrotum.
8851	Peptic ulcer.
8853	Hypertrophied prostate.
8854	Callus on finger.
8856	Intercostal neuralgia.
8857	Generalized Eczema.
8858	Peptic ulcer.
8860	Peptic ulcer.
8862	Unhealed dog bite.
8864	Vague pains in breasts.
8884	Encapsulated foreign body under skin post axillary line.
8886	Keloid.
8887	Intercostal neuralgia.
8875	Facial neuralgia.
8881	Cervical lymphadenitis.
8891	Chronic tonsillitis.
8893	Peptic ulcer.
8895	Dry catarrh, pharynx.
8897	Ulcers, deep, leg. Wassermann made.
8898	Enlargement left breast.
8899	External hemorrhoids.
8902	Pains in breasts at menstrual periods.
8905	Peptic ulcer.
8909	Abrasion, nasal mucous membrane.
8910	Old pigmented scar, leg.
8913	Sebaceous cyst, fibroma or lipoma pectoralis major muscle.
8916	Sebaceous cyst, frontal region.
8923	Vague pains abdomen, post-operative.
8925	Cracked lips.
8926	Lipoma right thigh.
8929	Painful breasts.
8930	Imaginary lump in breast.
8957	Indefinite gall-bladder and stomach trouble.
8956	Old discolored scar following removal of mole.
8948	Hyperacidity.
8952	Paralysis, facial muscles right side.
8942	Lipoma, left arm.

PRECANCEROUS CONDITION

Case No.	Diagnosis
8885	Senile keratotic area, left ear.
8879	Senile keratosis, face.

8896	Keratosis, precancerous, left temple.
8888	Cystic mastitis.
8900	Cystic mastitis.
8877	Adenoma, breast.
3623	Adenoma, breast.
8894	Naevus pigmentosus, face, active.
8904	Epithelioma, lower lip.
8906	Epithelioma, lower lip.
8908	Epithelioma, nose.
8920	Precancrcous kerototic areas, face and ear.
8915	Fibroma, left wrist.
8917	Fibroma and cystic mastitis, left breast.
8921	Epithelioma, lower lip.
8928	Fibroma, right breast.
8947	Tumor in left breast.
8940	Tumor in left breast.
8945	Naevus pigmentosa, right cheek, active.
8939	Old lacerated cervix uteri.

UNDIAGNOSED

8941	Vague stomach symptoms.
8954	Not present when called.
8873	Not present when called.
8953	Not present when called.
8876	Some enlargement submaxillary glands and soreness at base of tongue.
8892	Soreness of submaxillary gland.
8907	?
8924	Not yet diagnosed, referred to gastroenterologist.

QUESTIONABLE CANCER

8863	Diffuse irritation urethra, following operation for carbuncle.
8882	Small tumor protruding from old scar, left side of neck.
8955	Chronic sore on tongue.

CANCER

4125	Carcinoma, cervix uteri, quite extensive.
8903	Carcinoma, lower lip.
8918	Carcinoma, cervix uteri, quite extensive.
8927	Cancer, mouth (under treatment Mayo's Clinic).

SUMMARY

Non-cancerous	44
Precancerous	20
Questionable cancer.....	3
Undiagnosed	8
Cancer	4
(2 operable, 2 too far advanced)	
Total.....	79

It will be seen that a large percentage of potential cancers was found in this clinic. It is assumed that more than 50 per cent of these cases are curable, if measures are adopted for their eradications at an early day.

All cases of suspected cancer were referred to the family physician for further examination and advice. Other cases requiring medical attention also were requested to see the family doctor.—A. P. Stoner, M.D., Des Moines, Iowa.

PERSONAL MENTION

Dr. C. D. Shelton was born in Decatur county, Ind. He was educated in the common schools of that period. In 1849, he commenced the study of medicine. His course in this subject was finally completed in 1874 when he graduated from the Bellevue Hospital Medical College at New York City. Prior to that time he had obtained degrees from the Ohio Medical College at Cincinnati, in 1856, and from the Keokuk Medical College in 1864. He established his infirmary at Bloomfield in 1869, and has since that time been an honored resident of Bloomfield. His ninety-first birthday anniversary was celebrated at his home in Bloomfield, Friday, October 26, 1922.

Dr. Charles H. Mayo, noted physician and surgeon of Rochester, Minnesota, and his party, composed of Mrs. Mayo, John Mayor, Miss E. Mayo, Dr. L. Powell and D. F. Rankin, all of Rochester, were guests for a few hours in Cedar Rapids. They registered at a local hotel having driven through from Rochester on their way to the Iowa-Minnesota football game at Iowa City November 11, 1922. They left early to complete their trip. Although Dr. Mayo received his university education at Northwestern, he was for many years affiliated with the University of Minnesota, as professor of surgery, and in research work in connection with the Mayo Foundation. He and his party will occupy the Minnesota side of the grand stand and root for the Gophers.—Cedar Rapids Gazette.

Dr. Walter Fraser recently returned from Philadelphia, where he has been since the war and will resume the practice of medicine in Algona. Dr. Fraser left Algona and gave up his practice to enter the service. The family moved to Philadelphia where the Doctor was stationed and they continued to make that their home.

We left New York on September 11, 1922, on the S. S. Braga, of Faber line (French), our kit and baggage, all household effects and automobile on board. The sailing was smooth all the way and consequently we suffered no seasickness. Stops and short visits were made at Providence, R. I.; the Azore Islands; Lisbon, Portugal; Jappa, and we landed in Beirut on October 2, 1922, one week ago this morning. I'm sure the stop at Jappa was the most interesting as it was our first real glimpse of the people of the near east. To see them unloading freight (one touring car slid into the sea and to the bottom and was rescued next day by naked divers in plain view of all the ship's passengers) into ancient boats manned by red-fezzed, baggy trousered (Shriners will please note), moslems, were sights never to be forgotten. Some of the laborers wore only the fez, or tarbush, as it is called here. The night ride up along the coast to Beirut last Sunday was interesting, as the lighthouses of Mt. Carmel, Tyre, Sidon, and other old Biblical cities were all seen. We were met by Sister Jean and her husband, Dr. F. Smith, who are

stationed 100 miles north of here, and a number of the university men. Experienced no difficulties with the customs officers as far as baggage was concerned, but the auto and household goods are still being examined and appraised. The American university of Beirut authorities are looking after them. With a gang of cleaning women we attacked the interior of our residence and soon made it livable. It is all furnished. I may say right here that my wife says if any of the friends are interested in seeing what her home is like, to go and visit the home of the Good Shepherd in Sioux City. It has sixteen or twenty rooms, the largest sixty feet long and twenty-five feet wide by twenty-five feet high. None are small. Wife also says she thinks we are going to like Beirut in spite of ourselves. This morning I killed a six-inch centipede in Grandma Daly's room. The centipede's injury does not kill. Yesterday morning I found two sizable lizards under our bed. They are harmless, however, and we do not kill them as they are good insect catchers and there is plenty for them to do. During the five summer months there is no rain, so of course sand fleas, moths and mosquitos abound. The rainy season is about to start. We had two rains the past week. The flowers are beautiful and the fruit here delicious. Beirut has electricity and street cars and there are lots of automobiles, but the streets are so narrow that one cannot break the speed limit without breaking some one's leg or something else. We have had a touch of the eastern hospitality which is enjoyable. The Americans, connected with the American University of Beirut, are practically all back from the Lebanon mountains, which are close by, for the opening of school which begins the latter part of this week. The Syrian is proud of the university and students from all over the country are in attendancy, representing Greece, Turkey, Russia, Egypt and South America. It is the melting pot. The university has done a great work for good, and there is much more to be done. All we meet are enthusiastic and no one is knocking. We began eating at our home today. The cook and maid cannot speak a word of English, which helps us to pick up Arabic, a thing so necessary to living here and practicing medicine. Arabic, I think, is as difficult as Chinese. Our man, (the major domo), is a bright lad, and makes a good top sergeant. He speaks French and enough English, also Turkish and Arabic, and is only sixteen years old, and heading for a degree in medicine. Just now he left me to go and buy two dozen hens and a rooster for the chicken yard, because, he said, "eggs will be expensive and your family likes ham and eggs." I expect that some fine night some stealthy Arab with a bamboo pole will fish himself some very fine chickens out of our coop. My office is in the house, only here they don't say office, but say "clinic." There is no golf in Beirut but lots of tennis, which I will have to learn if I exercise. The sea is just out front—ample opportunity to learn swimming and also to

watch the water craft go by.—Dr. John W. Shuman, Sioux City Journal.

Dr. T. R. Jackson of Albia has located in Chariton for the practice of medicine.

Dr. W. J. Cochran of Monticello has sold his practice and office equipment to Dr. Paul E. Gibson.

Dr. Schule of Cedar Rapids has located in Lakota. Dr. Schule is a graduate of the Medical School, Iowa University.

Dr. Eleanor Hutchinson, women's physician for the state epileptic colony at Woodward, Iowa, has been appointed by the state board of control to succeed Dr. Lena A. Beach as superintendent of the Women's Reformatory at Rockwell City. Dr. Beach recently resigned to accept a position at Sauk Center, Minnesota, as superintendent of the girl's training school.

Dr. John C. Doolittle of The Retreat, Des Moines, sustained a fracture of the neck of the femur when he fell upon an icy walk Sunday evening, January 7. The Doctor had arranged to leave on the 9th to spend the winter in Florida.

Dr. J. A. Cahill, Volga City, is in New York City completing a scholarship in general surgery and urology at the New York Post-Graduate Medical School and Hospital. He will return this month.

Dr. J. S. Dean of Wheatland has removed to Long Grove.

OBITUARY

Dr. Charles Frederick Wahrer of Fort Madison died November 19, 1922. Dr. Wahrer was born July 19, 1850, in Baden, Germany. At the age of two years Dr. Wahrer, with his parents, came to America and settled near Keokuk, Iowa, on a farm.

In the year 1875 he graduated from Whittier College at Salem, Iowa. The following year he became a professor of mathematics at this same college. In 1887 he graduated from the Keokuk Medical College at Keokuk, Iowa.

For a great many years he practiced medicine at Mt. Hamill, Iowa, and the surrounding territory, where in serving his patients and the sick he was under severe difficulties, traveling over the clay hills with horse and buggy and a great many times was forced to go on foot.

In 1893 he moved to Fort Madison, purchasing the office of Dr. W. T. Eckley, and in all the years has given the best of service to the sick and needy.

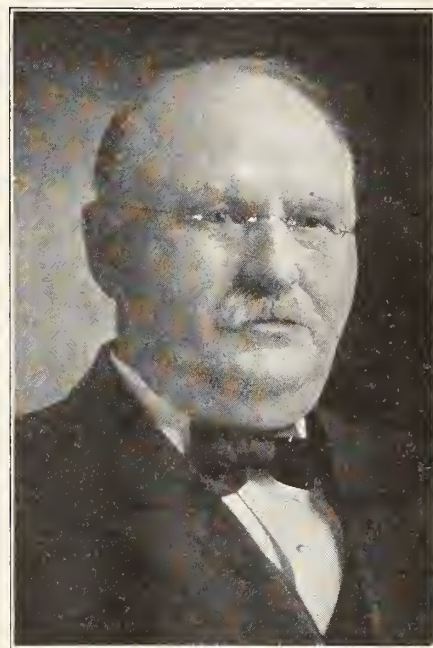
In 1898 he became professor of materia medica and therapeutics and in 1899 he became professor of medicine and practice, and president of the Alumni Association, Keokuk Medical College.

In 1904 he was elected president of the Southeastern Iowa Medical Society; in 1906 he served as president of Tri-State Medical Society; in 1908 was president of Iowa State Medical Society. He also served as chairman and vice-president of section of diseases of children, American Medical Association.

In 1875 he married Sarah McCracken, who sur-

vives, together with three children: Evelyn, who resides in California; Dr. Carl W. Wahrer, residing at Sacramento, California, and Dr. Frederick L. Wahrer, residing at Marshalltown, Iowa.

Dr. Wahrer was one of the best known physicians of Iowa. He was particularly noted for his originality in the discussion of medical papers. He was never absent from the meetings of the State Medical Society, and if a paper was read that did not meet his approval, he did not hesitate to express his views,



CHARLES FREDERICK WAHRER, M.D.
1850-1922

nor did he fail to commend views that were in accord with his own. Dr. Wahrer was not only a constant attendant at the meetings of the Iowa State Medical Society but many other societies of local and national character.

Personally, he was uncompromising in his likes and dislikes and never failed to express his views which often gained for him the reputation of being unfairly and unjustly prejudiced.

Dr. Charles Frederick Wahrer "An Appreciation"

It is difficult to realize that the genial lovable Wahrer has passed from out of our earthly companionship. A State Medical Society will not seem the same without the stimulus of his delightful humor and spicy sarcasm that he injected into each discussion in which he participated. During more than thirty years of membership he rarely missed a meeting, and few members were so generally known and held in such high regard. As each annual program expressed the current of medical progress, he was ever ready and his discussions were always timely. The critical spirit was tempered with a conservatism that cautioned often against a too ready acceptance of the new.

In the campaign for the better education of the public regarding quackery, nostrums, and food adulteration he took a militant part, and his public address on these subjects spread a message of widest influence.

The esteem in which he was held by his fellow members of the Iowa State Medical Society was manifested by his election to the presidency in 1908.

His activities in the American Medical Association were an added credit to the Iowa profession. He affiliated almost entirely with the Section of Diseases of Children, in which he was honored by being chosen as secretary one year and vice-chairman at another time.

In thirty-five years of professional work in Iowa as teacher and practitioner, he contributed to the best in Iowa medicine.

Two fine sons are his worthy followers in the profession, which in itself is a great legacy.

As a keen student of human nature, a lover of the beautiful in art and in nature, with that rare gift of natural humor, he enlivened every circle in which he moved, yet we loved him most for those fine humanly qualities that helped to cheer life's pathway, and will keep his memory green in the days to come.

Walter L. Bierring.

Resolutions—Lee County Medical Society

The Lee County Medical Society, at its regular session in Fort Madison, December 19, 1922, appointed a committee which drafted the following resolution on the passing of one of its oldest and most honored members, Dr. Charles Frederick Wahrer.

Resolved: That it is the desire of this society to pay suitable tribute of respect to the late Dr. Charles F. Wahrer, who was for so long a period such an active member of this society. He was a physician widely known throughout the state for his high moral character and public services; he was recognized as a leader, serving the best interests of the community, and the influence of his personality was far-reaching and will be felt long after his death. Dr. Wahrer fought the fight, kept the faith and has finished his course. What better comment could be made?

This society extends its sympathy to the family of the deceased. Particularly does this society desire to extend its deep sympathy to the wife, who has walked beside him for so many years of harmonious marital life and encouraged and sustained him by her own sane, thoughtful and loving spirit.

Signed,

F. W. Noble, M.D.,

J. G. Rea, M.D.,

Committee.

Edward Mercur Williams, M.D., of Sioux City, died at St. Joseph's Hospital, Sioux City, following an illness of two weeks, from pneumonia, January 9, age forty-one years. He was born at Wilkesbarre, Pennsylvania, October 16, 1881; his medical educa-

tion was obtained at the University of Pennsylvania from which institution he graduated in 1905; his professional studies were further pursued at Vienna and Paris, specializing in Neurology and Psychiatry. For a time he was associated with the clinical staff of Dr. Charles K. Mills of Philadelphia, where he received such training in the ground work of neurology under that master and other Philadelphia neurologists as could not be obtained elsewhere in this country.

Although a son of the Keystone state by birth, Dr. Williams had faith in the Middle-West, and gave evidence of this faith by locating in Sioux City. Here he proved himself a valuable addition to the local profession as well as to the constituents of the



EDWARD MERCUR WILLIAMS, M.D.,
1881-1923

surrounding territory. While somewhat retiring in his disposition, he had the happy faculty of making and retaining friends. To those who knew him, Dr. Williams will be missed not only as a friend and gentleman but as one who retained and conscientiously reflected the teachings of such men as Mills, Dercum, Burr, the late S. Weir and John K. Mitchell, Spiller, Frazier and others who formed the nucleus around which the Philadelphia School of Neurology revolved and had its being.

Dr. Williams was a member of the Woodbury County and Iowa State Medical Societies; The Sioux Valley Medical Association; Fellow of the American Medical Association; The Philadelphia Neurological Society, and of the American Neurological Association. He was also a member of various Masonic organizations and local clubs. He was married June 17, 1911 to Miss Florence Lofland, of Philadelphia, who with one daughter survives him.

T. B. T.

Dr. John H. Thornton, of Lansing, died January 1 from cerebral thrombosis after an illness of two months, aged seventy-nine years. He was born in Canada in 1844, removing to the states when a child, spending his early years and youth near Manitowoc, Wisconsin. He graduated from Rush Medical College in 1879, and located at Lansing in 1881. Dr. Thornton was one of the organizers of the Allamakee County Medical Society of which he was vice-president at the time of his death. He was a member of the Iowa State Medical Society and a Fellow of the American Medical Association. For years he was local surgeon for the Chicago, Milwaukee and St. Paul Railway. In a professional practice of over thirty years in one community, his life and service becomes a part of the history of northeastern Iowa. Dr. Thornton is survived by his son, Dr. John W. Thornton of Lansing.

Dr. James F. Battin of Marshalltown, died November 25, 1922.

Dr. Battin was born August 9, 1869, on a farm seven miles north of Marshalltown, the youngest son of Judge and Mrs. William Battin, pioneers of this county. He was reared in Marshall county and had lived most of his life here. September 12, 1894, he was married to Miss Eliza Stiles, of New Sharon, then a high school teacher.

In 1897 Dr. Battin was graduated from the Iowa State University college of medicine and began practicing at Newton. He practiced at Onawa for several years and later was in Sioux City, then Melbourne and New Providence for three years, coming to Marshalltown in 1911.

He offered his services in the world war and in February, 1918, was commissioned a first lieutenant in the medical corps of the army. Later he was promoted to a captaincy and served fourteen months in the United States General Hospital at Fort Des Moines, during which time he held the positions of receiving officer and registrar of the post. He was released from active duty in April, 1919, and returned to his practice here.

Dr. Wm. P. Slattery of Dubuque died in October, 1922. Born in Tipperary, Ireland, February 4, 1868, William P. Slattery came to America at the age of eighteen years. For a time he was employed in a book and stationery store in New York. He had acquired a common school education in his native country. He was reared by an uncle, his parents having died when he was quite young. Coming West, he located in Dubuque, and immediately entered the Iowa State University, where he acquired his collegiate degree. Returning to New York, he entered Bellevue Hospital, and there his interest became aroused in the patients in the insane wards. He made a deep study of mind disorders, and took the full course in the Bellevue Medical College.

Finishing his Bellevue medical course, Doctor Slattery entered the main hospital as an intern, where

he remained a year or so. He then came to Dubuque and laid the foundation for the wide practice which he in after years enjoyed. In his Iowa college days, Doctor Slattery was one of the state's greatest athletes. He married Miss Anna Power in Dubuque, who with two sons and a daughter, survives. The children are Miss Mary, a school teacher; William and Roger Slattery, all at home.

BOOK REVIEWS

COLLECTED PAPERS OF THE MAYO CLINIC, ROCHESTER, MINNESOTA

Edited by Mrs. M. H. Mellish. Volume Thirteen, 1921. Published May, 1922. W. B. Saunders Co., Philadelphia and London. Price, \$12.00.

This magnificent volume of 1318 pages contains 117 papers prepared by the members of the Mayo Clinic of which twenty-three are devoted to the alimentary tract. Dr. Porter Vinson presents two papers of much interest on Hysterical Dysphagia based on sixty-nine cases collected at the Mayo Clinic, and one on Esophageal Stricture, Following the Vomiting of Pregnancy. These papers are referred to because of their significance to the general practitioner. Of these many valuable papers, we may only mention such as are of special interest because of their unusual nature, and because of the rare opportunity of securing data, only to be found in a great clinic. Circumscribed Syphilitic Ulcer of the Stomach, by Dr. George B. Eusterman, who bases conclusions on a series of sixty-five cases. The free discussion on Carcinoma Developing on Gastric Ulcer leads us to read with interest a communication by Dr. Charles H. Mayo on the progress of investigation in which he suggests dropping the "percentage basis" which has led to much confusion among pathologists and clinicians. Dr. Russell I. Carman presents a paper on Errors in the Roentgenological Diagnosis of Duodenal Ulcer; affirmative and negative, and reaches the following conclusion; "I believe that their employment at this time by the roentgenologist in the diagnosis of duodenal ulcer is unnecessary and would increase rather than diminish his mistakes. While the typical anamnesis of ulcer is admirably simple and clear it is not pathognomic nor is ulcer always accompanied by a characteristic history." Dr. E. C. Rosenow reviews his important studies on Focal Infections at some length. Dr. F. C. Mann and Dr. K. Kawamura present an experimental study on Duodenectomy. A series of papers in relation to the liver are presented. Post-operative Biliary Fistulas by Drs. Balfour and Ross. The Relation of the Liver and the Pancreas to infections of the Gall-bladder, by Dr. E. S. Judd. The Effect of Total Removal of the Liver, by Drs. Mann and Magrath, and the Surgical Significance of Hepatic Incompetence by Dr. W. J. Mayo.

In the division on diseases of the Urogenital Organs are nineteen papers of great interest. As our space is limited and as we are quite at a loss to find one, or more illustrative of interest than the others we may group them together as presenting a fund of information to one seeking something authoritative on almost any problem that may confront him. Under the head of Ductless Glands are seven papers on various conditions of the Thyroid. Dr. Henry S. Plummer considers the Interrelationship of the Function of the Thyroid Gland and Its Active Agent Thyrotoxin in the Tissues of the Body, upon which he elaborates somewhat extensively. Dr. John de J. Pemberton takes up the Surgical Management of Toxic Goiters. The two papers mentioned, supplemented by the others in this series really constitutes a book in itself on the Thyroid. Questions under the head of Blood invites much interest. The first paper by Dr. Georgine Zuden relates to the Blood Cholesterol: Its Importance and the Value of Its Determination in Cancer Research. We mention one of the conclusions reached: "The test for cholesterol in the blood is not a diagnostic test, but it furnishes valuable information concerning the efficiency of cholesterol metabolism."

Pernicious anemia is considered; one paper may be mentioned by Dr. W. J. Mayo: Splenectomy in Splenic Anemia and Banti's Disease. This is one of Dr. Mayo's favorite subjects but it never grows old under his hands. Skin and Syphilis, Head, Trunk and Extremities, come in for due consideration. Dr. Adson reviews the discussion on birth palsy but cannot quite agree with Thomas who has written quite extensively on this subject. Dr. Adson fortifies his position by experimental study. This is a subject which should be looked up by the obstetrical surgeon.

There are many subjects contained in this volume we would like to consider but space will not permit. The value of the contribution rests largely on the care in checking every possible source of error as to the facts and theories and in the watchful care on the part of the editor, Mrs. Mellish, in seeing to it that errors of composition are reduced to a minimum, and that the references are always accurate.

DISEASES OF THE SKIN

By Henry H. Hazen, A.B., M.D., Professor of Dermatology in the Medical Department of Georgetown University; Professor of Dermatology in the Medical Department of Howard University. Sometime Assistant in Dermatology in the Johns Hopkins University; Member of the American Dermatological Association; Second Edition; 241 Illustrations, Including Two Color Plates. C. V. Mosby Co., St. Louis, 1922. Price, \$7.50.

This valuable contribution to diseases of the skin, of which this is the second edition, offers many attractive features. The first is, that in a volume of

607 pages the important facts in relation to this difficult branch of medicine are presented in a logical and concise manner and while the larger volumes consider the subject in more detail this volume seems an almost necessary supplement for the study of the main facts involved in the study of skin diseases. This edition has practically been revised and some additions made. It is practically impossible to review the book in detail but to present some of the features which impress us. The first part relates to the anatomy and physiology of the skin, the etiology, symptomatology and pathology of disease of the skin, diagnosis and the general principles of treatment, including formula which may be employed under certain conditions. Following important hygienic considerations, the different forms of skin diseases are taken up. Syphilitic diseases of the skin constitute an important feature and considerable space is devoted to its consideration, particularly diagnosis and treatment. We believe the student and general practitioner of medicine will find in this volume a very helpful guide to a class of diseases, not altogether attractive, but as they exist, they must be cared for in a scientific and intelligent manner.

THE PRINCIPLES AND PRACTICE OF X-RAY TECHNIQUE FOR DIAGNOSIS

By John A. Metzgar, M.D., Roentgenologist to the School for Graduates of Medicine. Medical Department, University of California, Southern Division, Los Angeles. With 61 Illustrations. C. V. Mosby Co., 1922. Price, \$2.75.

The author in the preparation of this book aims to place in the hands of the student and operator a formula on which to base his work that he may obtain the better results. The numerous photographic illustrations are original and enable the operator who has limited time for study in schools of roentgenology, to work out the problems in a successful manner. Beginning with the laboratory and appliances we have presented the questions of distance, time relation, voltage, law of densities and dangers of the ray.

In chapter two, Stands, Tables and Target Adjustment. Then the examination of the various parts of the body so fully illustrated that the operator may follow the technique without serious difficulty. This is certainly a very useful x-ray laboratory manual.

THE EIGHTEENTH AMENDMENT AND THE PART PLAYED BY ORGANIZED MEDICINE

By Charles Tabor Stout. Publisher, Mitchell Kennerly, New York.

On reading this book we at first were at a loss to determine its purpose. We assume, however, that

Mr. Stout intends to influence public opinion against prohibition by exciting prejudice against the medical profession and to discredit the statistics of life insurance companies. Now it may be, that the attack is primarily on "organized medicine" by making the medical profession responsible for prohibition. We are not quite sure but the book was written as a part of the prohibition propaganda to show the absurdity of the antiprohibition argument (for we have rarely read a book so full of absurdities). We quite agree with the author that national prohibition must be a failure in the present state of public opinion and that its influence on respect for law and order is bad, and we also believe that a fair straightforward presentation of facts from a moral and economic standpoint will carry much more influence than mis-statements. Mr. Stout assumes that the eighteenth amendment was not adopted by a fair vote of the people and could not have stood the test of the supreme court, if it had not been for the attitude of the American Medical Association as expressed by the adoption of resolutions by the House of Delegates presented by the Committee on Public Health and Legislation to the effect that alcohol in any form was of no value either as a food or medicine. These resolutions were adopted by a majority of perhaps one hundred voters. Whether the resolutions would have been adopted by a majority of the 60,000 members or not, we have no way of knowing, but we feel quite sure that if this book was generally read by the profession the majority for the resolutions would be very large. We know that statistics can be used to establish almost any contention but we feel quite sure the great life insurance companies have studied their mortality tables with sufficient care to make them safe against Mr. Stout's attacks. We have no disposition to criticize the author's views on the stupidity of the average voter and the harm that may come from it. The author makes himself ridiculous and amusing in entering the field of medical science and policy in attempting to show that alcohol is necessary to the human body, and that it is the most valuable agent we have in treating disease; or that the high mortality of the influenza epidemic was due to the non-use of alcohol; or that any group of leaders in the "great medical trust" called the American Medical Association or "Organized Medicine" has anything to do with the private practice of 150,000 physicians in the United States. Whether scientific medicine is to be replaced by the "newer schools" will probably not be influenced by the author of this book.

TRANSACTIONS OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA

Third Series, Volume the Forty-third.
Philadelphia. Printed for the College, 1921.

This volume of Transactions contains the papers read before the College from January, 1921 to December, 1921, inclusive. The College was formed in

1787 with Dr. John Redman, president and has been an important factor in developing medicine in Philadelphia and in maintaining the spirit of progress and high ideals. The first contribution in this volume is a memoir of Dr. J. Ewing Mears by Dr. Richard H. Hart. Dr. Mears was born in Indianapolis, Indiana, October 17, 1832 and died at the Presbyterian Hospital, Philadelphia, May 28, 1919 of pneumonia. For many years he was a prominent surgeon in Philadelphia.

A memoir of Dr. George S. Gerhard is presented by Dr. Francis R. Packard. Following the president's address by Dr. William J. Taylor is a series of carefully prepared papers by distinguished physicians and surgeons. An interesting feature of this volume may be found in the proceedings of the Section of Medical History and of the Army Medical Department in the World War by Surgeon General Ireland.

THE PROPAGANDA FOR REFORM IN PROPRIETARY MEDICINES

Vol. 2, 1922; Containing Reports of the Council on Pharmacy and Chemistry and Contributions from the A. M. A. Chemical Laboratory and from The Journal of the American Medical Association. Cloth. Price, \$2.00. Pp. 603 with Illustrations. Chicago: American Medical Association, 1922.

The present book is the second volume of the "Propaganda for Reform in Proprietary Medicines." The first volume ran through nine editions. The ninth edition contained (1) the most important reports of the Council on Pharmacy and Chemistry, (2) the reports of the A. M. A. Chemical Laboratory, and (3) those articles from The Journal of the American Medical Association which deal with the problems of proprietaryship in medicine and the furtherance of rational drug therapy. All of this material covered a period prior to 1917.

The present (second) volume contains similar material covering the period from January, 1917, to April, 1922, inclusive. Like Volume 1, this volume is divided into four parts:

Reports of the Council on Pharmacy and Chemistry:—This section presents the principles and rules which govern the Council in the examination of medicaments, contains articles and reports bearing on the work of the Council as well as the most important reports of the Council from 1917 to April, 1922, inclusive.

Reports of the A. M. A. Chemical Laboratory:—This, besides presenting the aims and objects of the Association's Chemical Laboratory, also outlines some of the Laboratory's work which is of special interest to physicians.

Contributions from The Journal: Proprietary Products:—This contains articles which have appeared in The Journal A. M. A. on proprietary preparations and their methods of exploitation.

Contributions from The Journal: Miscellany:—In this section are articles dealing with matters of interest to the medical profession but not coming strictly under the classification of proprietary medicinal preparations.

A comparison of the material that has appeared in Volume 1 of the Propaganda for Reform with that which appears in this volume will reveal the changing conditions in the proprietary medicine field. Many of the reports in the first volume brought out the fact that medicinal preparations were at that time foisted on the profession with false claims of composition; reports of this character are less conspicuous in the present volume. Many of the reports in Volume 2 deal with unwarranted therapeutic claims, especially those advanced for animal organ preparations, serums, vaccines, preparations for intravenous medication, etc. The present volume will also be found of interest in its portrayal of the changed conditions in proprietary medicines brought about by the World War.

The index in this new volume is, in effect, a bibliography, including references not only to articles in the book but also (a) to articles which appeared in Volume 1; (b) to articles on the same general subject in The Journal of The American Medical Association, and (c) to articles appearing in the annual reports of the Council on Pharmacy and Chemistry and of the A. M. A. Chemical Laboratory, but not printed in either volume of the Propaganda for reform in Proprietary Medicines.

This book is not only valuable for the information it contains, but it is also interesting. It shows up the technique of the artist in the sale of proprietary medicines, tells of his skillful word-pictures that are sent to the physician as "literature." It makes clear the work of the Council on Pharmacy and Chemistry, the A. M. A. Chemical Laboratory and The Journal of the American Medical Association in their several capacities as servants to the medical profession and as champions of rational medicine. The book should be in every physician's library, and more than that, should be within reach for convenient reference.

OPHTHALMOSCOPY, RETINOSCOPY AND REFRACTION

By W. A. Fisher, M.D., F.A.C.S., Chicago, Illinois, with 248 Illustrations, Including 48 Colored Plates. Published by W. A. Fisher, 31 N. State Street, Chicago, Illinois. Price, \$4.00.

This little book containing 218 pages is printed on good paper with large clear type. It is profusely illustrated containing 248 illustrations which take up about as much space as does the printed matter. There are twenty-four colored plates of the fundus. They are good but very small, being only one and three-fourths inches in diameter. At the end of the book a duplicate of these plates is found for use in

the schematic eye. Many pages of text are devoted to description of these plates and their use in the schematic eye.

The author does not stick to his subject but includes examination, vision, prognosis, fields and treatment of a number of eye conditions. There is no mention of ophthalmoscopy of the angle of the anterior chamber. About 100 pages are devoted to refraction, the subject being discussed in a very elementary manner.

It is Dr. Fisher's opinion that ophthalmoscopy and fitting of glasses belong to the general practitioner, acquirement of the necessary practical and theoretical knowledge is easy, interesting and within the reach of all and that by mastering the methods described in his book and equipping himself with the necessary instruments there is no reason why the general practitioner should not prescribe so as to correct the common error of refraction. This opinion is not concurred with because poor refraction will do the general practitioner more harm than good. This book can only be recommended to those general practitioners who wish a very elementary knowledge of the subject.

E. P. Weih.

THE EVOLUTION OF PUBLIC HEALTH NURSING

By Annie M. Brainard, Editor of the "Public Health Nurse." Lecturer on Administration of Public Health Nursing in Western Reserve University, 12 mo of 454 Pages, Illustrated. W. B. Saunders Co., 1922. Price, \$3.00 Net.

We are informed that public health nursing is an outgrowth of visiting nursing as far back as the first century of the Christian era and on during the middle ages. "With the dawn of the seventh century a new epoch in the social history is opened up" but not until the nineteenth century did intellectual freedom come upon the world, with the advent of the French Revolution and the American Revolution.

It is said that district nursing first started in Liverpool in 1859 by William Rathbone and from small beginnings the work spread rapidly. The author carries us on to 1874 when Metropolitan and National Association were formed under the direction of the Order of St. John of Jerusalem. In 1887 a popular subscription fund of 76,000 pounds was raised on the celebration of fiftieth anniversary of Queen Victoria's accession to the throne, which was devoted to the advancement of nursing and training. Then comes a chapter on early visiting nursing in America and another chapter on the organization of Visiting Nurse Associations.

The book before us does not claim to be a history of nursing but a history of the evolution of district and visiting nursing which has now become so important a part of the world's system of nursing. This history should be available for pupils in nurse train-

ing. In many of our hospital training schools for nursing the plan seems to be to impart a knowledge of how to attend sick people and but little of the spirit of service which should be imparted as a means to a broader culture and a conception of the spirit which actuated the pioneers in this great cause.

ANIMAL PARASITES AND HUMAN DISEASE

By Asa M. Chandler, M.S., Ph.D., Instructor of Biology, Rice Institute, Houston, Texas. Paper, Price, \$4.50. Pp. 572 with 253 Illustrations. New York, John Wiley & Sons, Inc., 1922.

This volume is a rather comprehensive medical zoology. It is well written and, so far as can be determined by the reviewer, it is accurate. The book is well suited for use in educational institutions as a reference book in libraries, and it will also become of great service to the practicing physician in need of the type of knowledge that this book furnishes, but it is more of a zoology than a work dealing with the medical phases of infestations of man.

D. J. G.

THE SURGICAL CLINICS OF NORTH AMERICA

August, 1922, Volume 2, Number 4, Boston Number. Published Bi-Monthly. W. B. Saunders Co., Price Per Year, Paper \$12.00 Net; Cloth \$16.00 Net.

This number contains fifteen clinics by well known Boston surgeons and is of unusual interest and value. The first is a clinic by Dr. William P. Graves including a series of Gynecologic cases followed by a clinic by Dr. John T. Bottomley on Gall-Bladder Surgery. Dr. Frank H. Laney considers Tubercular Glands of the Neck and Spinal Accessory Paralysis. An interesting clinic is presented by Dr. Elliot C. Cutter on the Etiology of Post-operative Pulmonary Complications. The complications are real surgical tragedies. There is an important clinic on the Treatment of Ankylosis of the Elbow, by Dr. W. R. G. MacAusland.

Dr. Frederick J. Cotton presents an extensive study on Knee Lesions and Operations based on 100 personal cases. This important paper should be carefully studied. There are other important clinics we have not the space to consider.

THE AMERICAN PRESS LEAGUE

Dr. D. S. Fairchild, Editor,
Journal of the Iowa State Medical Society,

For several months The American Press League has had under consideration a proposition to conduct an educational campaign through the columns of the Public Press throughout the United States on

the subject of Medical Progress during recent years. Incidentally, the campaign will be directed toward counteracting the propaganda sent broadcast by the promoters of "cults" and "isms."

The material to be used will consist of carefully prepared "feature" articles of a scientific character written by members of the profession in simple newspaper English understood by laymen. These articles will explain what the medical profession has accomplished in the field of prevention and eradication of disease.

A letter mailed some time ago has brought replies from the officers of about forty state medical societies, nearly all of whom have expressed a lively interest in the movement.

In the State of Illinois the proposed campaign has been recommended by the House of Delegates of the State Medical Society and the council has considered and approved the plan in detail and appointed a committee of three physicians to co-operate with The American Press League in putting it into effect.

We are now writing you, as the Editor of the official organ of the Medical Society of your state, asking if you will cooperate with us in this much needed educational movement in your state. As before stated, it is our desire to enlighten public opinion throughout the entire nation as to the truth relating to medical progress, and thereby inspire public confidence in the regular practitioners, and skepticism when quacks come forward with their "isms" and "cults."

We would be pleased to hear from you at an early date, signifying your willingness to give this movement your valuable support.

Thanking you in advance for a reply, we remain,

Very truly yours,

THOMAS J. SULLIVAN,
President.

The United States Civil Service Commission announces the following open competitive examination: junior medical officer and assistant medical officer (roentgenology; psychiatry), medical officer (tuberculosis, neuropsychiatry, internal medicine and diagnosis, physiotherapy).

Applications will be rated as received until the close of business on July 3.

The examinations are to fill positions in the Indian Service, the Coast and Geodetic Survey, the Public Health Service, and the Veterans' Bureau.

Competitors will not be required to report for examination at any place, but will be rated on the subjects of education and training, weighted at 30 per cent, and experience, weighted at 70 per cent.

Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the board of U. S. Civil Service Examiners at the post office or custom house in any city.

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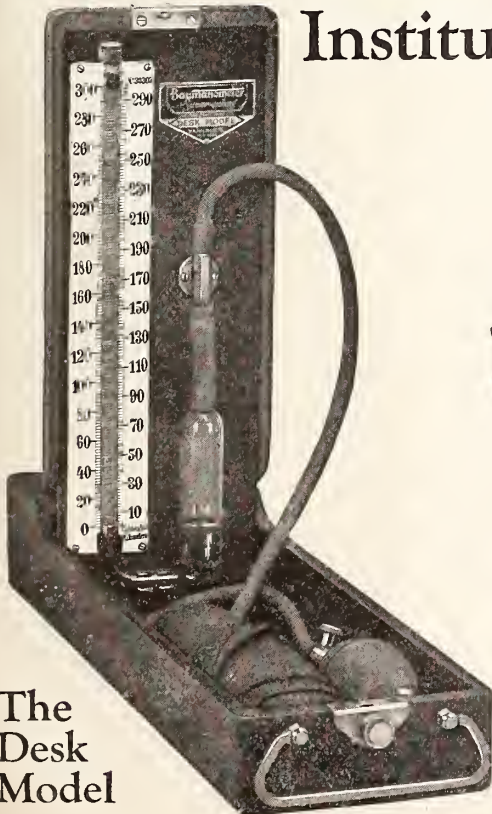
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HYGEIA—THE A. M. A.'S NEW HEALTH MAGAZINE

We bespeak a warm welcome from physicians as well as from the general public for the new health journal, Hygeia, to be issued by the A. M. A., the initial number to appear in April. This journal will be devoted to the development of individual and community health, describing in laity language the progress made by medical science, the prevention of disease and the preservation of health. The primal feature of this publication is for the education of the public along scientific health lines. The contributors will be leaders in scientific medicine and public health work. Every member of the State Society should subscribe for Hygeia for his reception room table. Subscription price to Fellows of the A. M. A. is \$1 for eight months. Regular subscription price \$3.00 per year.

NEW AND NON-OFFICIAL REMEDIES

In addition to the articles enumerated in our letter of August 1, the following articles were accepted during July:

Intra Products Company:

Ven Calcium Cacodylate Ampules—IpcO.

Winthrop Chemical Company:

Theocin.

During August the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion in New and Non-official Remedies:

G. W. Carnrick Co.:

Corpus Luteum—G. W. C. Co.

Gradwohl Laboratories:

Sterile Solution of Mercury Oxycyanide—Gradwohl.

Lederle Antitoxin Laboratories:

Pollen Antigens—Lederle.

Solution Epinephrine—Lederle.

New York Intravenous Laboratory:

Loeser's Intravenous Solution of Mercury Oxycyanide.

Parke, Davis and Co.:

Antipneumococcic Serum (Polyvalent).

Winthrop Chemical Co.:

Luminal Sodium Tablets 1½ grains.

During October, the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion in New and Non-official Remedies:

Lederle Antitoxin Laboratories:

Diphtheria Toxin-Antitoxin (O.1L+).

H. A. Metz Laboratories, Inc.:

Alumnol.

H. K. Mulford Company:

Hay Fever Timothy Pollen Extract—Mulford.

Parke, Davis and Company:

Normal Horse Serum—P. D. & Co.

Rabies Vaccine (Cumming)—P. D. & Co.

E. R. Squibb and Sons:

Acne Vaccine.

Colon Vaccine—Squibb.

Gonococcus Vaccine.

Meningococcus Vaccine.

Normal Horse Serum.

Pertussis Vaccine, Curative.

Pertussis Vaccine, Immunizing.

Purified Diphtheria Antitoxin (Antidiphtheric Globulin).

Pneumococcus Vaccine.

Staphylococcus Vaccine.

Stachylo-Acne Vaccine.

Streptococcus Vaccine.

Tetanus Antitoxin Purified.

Typhoid Vaccine.

Typhoid Vaccine Combined, Immunizing.

During November, the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion in New and Non-official Remedies:

Lederle Antitoxin Laboratories:

Mercurialized Serum—Lederle for Intravenous Use.

Charles Leich and Company:

Sulfarsenol.

Mallinckrodt Chemical Works:

Barium Sulphate Pure—M. C. W.

H. A. Metz Laboratories:

Benzosol.

Parke, Davis and Company:

Silvol.

Arsenobenzol—Dermatological Research Laboratories and Arsphenamine—Dermatological Research Laboratories:

These products are now marketed by the Abbott Laboratories as Neoarsphenamine-D. R. L. and Arsphenamine-D. R. L. The Council has continued the acceptance for New and Non-official Remedies under these names.

During December, the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion in New and Non-official Remedies:

Powers-Weightman-Rosengarten:

Arsenobenzol—Billon.

Merck & Company:

Digitan Ampules (for Hypodermic Use).

Digitan Ampules (for Oral Use).

"Endocrine and other Organotherapeutic Preparations" is the title of a booklet just issued by Armour and Company. This pamphlet contains articles upon the products that the title covers. A copy of it will be mailed to any physician or pharmacist who asks for it.

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FACING THE NEW DAY IN MEDICINE*

A. P. STONER, M.D., F.A.C.S., Des Moines

The practice of medicine is as old as civilization itself. Aristotle was the son of the Macedonian kings' physician; Hypocrates, born 470 B. C., was the father of medicine. Generations before his time, however, in the days of Homeric heroes, when Æsculapius was being deified, the profession of medicine occupied an honored place in the minds of the people. Medicine became an hereditary succession in certain families. Practitioners lived together in communities to which patients went for treatment. Schools were organized, records were kept and knowledge thus transmitted from generation to generation. There were general practitioners and surgeons, and young men were trained in other specialties. Occasionally a promising youth went out to procure additional knowledge, and afterward to disseminate that of his own. He traveled throughout the whole known world; to Persia, to Syria, to Egypt, to Cyrene, and to the Greek Island of Cos, the birthplace of Hippocrates, where the great clinic of the day was located. Often he tarried long in one of these centers of medical culture, thus broadening his knowledge of diseases and their treatment. It is seen that in the early day, that there was the same craving for new knowledge in medicine that there is today. Hypocrates himself went out into other lands and taught. His two sons were physicians, and his daughter married the celebrated physician, Polybus. The Hypocratic oath with which all are familiar, indicates fully the dignity and honorable aims of the profession of his time. Hypocrates was the first to show that the study of disease must be made through observation and deduction. Thus was the beginning of scientific medicine that we practice today.

During the next 500 years, medicine either waned or was at a standstill. Intensely interesting it would be to take up the life of Galen, the

next great medical scientist, practicing 150, A. D., when the profession of Rome, then the world's capitol, had become degenerate, and medicine debased and hopeless. When doctors, if history is truly written, were a parcel of vampires, mean spirited, ignorant, and the oath of Hypocrates a dead letter; but this history cannot be prolonged here; suffice to say, that even then-medicine had its "ups and downs."

Passing now, over a period of more than 1800 years to that of the present, during part of which time the profession underwent vicissitudes that staggers an attempt at detail, when, as one writer puts it, "the meanest imagination among us could measure with a foot-rule the intervening progress in science for the next thirteen or fourteen centuries after Galen."

Modern medicine dates back to less than 100 years ago. The strides made during the fifty years last past, or beginning with the discoveries of Pasteur, whose Centennial anniversary we celebrate tomorrow, eclipses in importance and magnitude that of any other branch of science. The American Medical Association, organized seventy-five years ago, until twenty-one years since, was an aggregation rather than a well planned organization of the medical men of this country. It had a struggling medical journal in rented quarters and about 5,000 members, compared with its more than 80,000 subscribers today, which reaches not only the profession of the United States and Canada, but through its Spanish edition carries scientific messages to Mexico, Cuba, Central and South America, and it is housed in its own magnificent plant. During this brief latter period, so much has been accomplished in raising the standard of medical education, furthering and improving hospitalization, etc., that the scope of this address would be overburdened if even an outline were attempted. Through its reorganization, American medicine has been rescued from a mediocre position to the highest plane of medical leadership in the world today.

But during these periods, while legitimate medicine has been flourishing; and our adolescent profession, making its wonderful progress toward

*The President's Address before the Annual Meeting of the Polk County Medical Society, December 26, 1922.

maturity and world recognition, the field has been invaded by infant "cultists" and "pathists" in the guise of religious pretexts, professing to "dispose of both sin and sickness by relegating them to the realm of mental delusion," or by such astounding discoveries (sic) that all the ills of mankind are due to mis-fitted, mis-constructed back-bones; easily corrected, and diseases cured by means of the magic "Chiro thrust," or by the "hammer-lock" of the "Osteo." They have thrown the swaddlings of their monstrosities into the face of the medical profession, and are rearing the offsprings through the medium of the press, by the wireless route, etc., with but feeble protest from us. Other and equally important questions confront the profession, and must needs be handled with the utmost delicacy, but boldly. They have come upon us surreptitiously and unsuspectingly. The profession is facing a series of changes in conditions, that to all minds create a critical situation in medicine today. Socialistic propaganda, aided by political endeavor of a similar stripe, is being exerted, which if adopted would divorce the legitimate practice of medicine from the avenues in which the family doctor has played the signal part in relation to the sick and afflicted. State medicine as it relates to the functions of protecting its citizens from disease and injury, is a most commendable feature of the law. It is the duty of the state to protect its citizens through approved methods of establishing effective quarantine against communicable diseases, by notification through its official channels of the presence of such diseases in families, in schools, etc. By inoculation and vaccination to secure immunity; by furnishing standard serums for immunization and treatment; by the prevention of pollution of water supplies; by the prevention of the adulteration of foods; by the enforcement of measures to prevent injuries in factories, railways, etc. But any suggested legislation tending further to reduce the physician to the role of a hireling, should be met; must be opposed by a united profession. The very name of compulsory health insurance is inimical to the interests of the profession. It is not applicable, and must not be adopted in this country. Contract practice, whereby the physician or surgeon for a small monthly stipend, agrees to care for family groups, should be condemned as unbecoming the dignity and interests of medicine. We must organize more effectively to combat the visionary and plausible (?) schemes for the cure of all the social and industrial ills.

We have ceased to be individual practitioners. Up until the present generation the practice of medicine was purely individualistic. The physi-

cians' responsibility ended with his duties to the patient, without any particular concern for society at large. We face today a broadening conception of the functions of medical service in its relation to social needs. The social structure of our civilization depends upon proper functioning of the health and sanity of our people, and we as physicians who hold the closest relations to the views, to the intimate lives and thoughts of the people, must play a larger part in the disposition of individual problems that constitutes an integral part of the public existence.

Specialization and group practice if properly developed and administered, should insure more accurate and efficient service to patients. In no wise should this interfere with general individual practice. The general practitioner must continue to play an indispensable part in medical progress. Domiciliary visits will not be minimized, and ail proposals by "faddists" or "reformers," within or without the profession, that would destroy or interfere with the relationship between the family and the doctor, or the freedom of the individual to choose for himself the medical service he desires, must be uncompromisingly opposed.

If we would curb the evil tendencies that threaten to handicap the independence of the profession, our organization must be awakened to the conception and trend of the public mind today as it relates to professional and commercial activities. Apropos to the thought, let me quote here a few extracts from an address delivered before the Cleveland Academy of medicine, two years ago.

Present Object of Organization in the Profession

Up to the present time the primary if not the sole object of organization in the medical profession has been the diffusion of medical knowledge to the end that the population should best receive the benefits of the discoveries and advancements made in the science of healing. The benefit to the individual member of the profession has been in his opportunity through such organization to increase his own knowledge and perfect his own methods for the sole purpose of rendering better service to his clientele.

Organized medicine has scarcely concerned itself with the financial side of the practice of medicine except in a half-hearted way to decry the abuse of contract practice. It has ever held that to discuss or consider the financial aspects of professional work has been inconsistent with its altruistic ideals. Nothing could be farther from the truth.

Power of Organized Bodies

Meanwhile society in its various component parts, has not been content to remain at a standstill. Organization has been used to promote the material

welfare of the members of different groups, and to make the influence of these groups as such felt. "In union there is strength" has been the slogan that has guided these various organizations of trades, businesses or movements to phenomenal success. It is hardly necessary to mention the various trade unions and what they have and are accomplishing for their members. To realize what these unions have accomplished for their members one has but to pay the bills for building a house with union labor; and if one wishes to determine the extent of their power let him try to build a house with non-union labor, or introduce a non-union sub-contractor or a non-union piece of material on the job. If this is not enough, let him remember that only three or four years ago a union composed of only a comparatively small number of men boldly went to Washington and gave the president of the United States a limited period of time to see that their demands were complied with, under a threat of a complete and disastrous paralyzation of the transportation systems of the country; and that the president and congress bowed to their masters and did their bidding.

The different companies or individuals engaged in the same line of business have found that they must organize as a unit for the benefit of their type of business. As individuals they may be competitors, but they find that an organization which embraces them all is an essential. As example may be mentioned "The Iron and Steel Institute," "The Mine Owners' Association," "The Builders Exchange," "The Real Estate Board," and many others.

Extension of Organized Effort Into All Fields

Movements connected with education, religion, philanthropy and what not have found that in organization is their great success. Experience has taught that the community chest will raise more funds with less effort than the separate appeal of a hundred of its constituent units; that the National Red Cross can easily do what its individual chapters could not even attempt; that even the churches can promote their propaganda far more effectively if combined into a federation of churches.

All of these organizations use publicity to promote their objects. They shout with headlines in the papers. They do not let it be forgotten that they are on the job, doing things.

Take from the daily paper all the items in which an organization is the principal person and the paper will look very white. On Saturdays the federated churches at least one page; every day the dealers and manufacturers of electrical supplies two full pages; baseball, at least one page, and other organizations and interests lesser amounts, but very numerous.

They are all, moreover, working for their own class interests. They take their own interests very seriously. They believe that a thing which is worth doing is worth doing well. Therefore, they do not intrust their vital interest to well intentioned, philanthropic members who may be willing to donate

such part of their time as their feeling of responsibility dictates as sufficient to discharge the obligation they have assumed, but they employ trained and competent men for their needs and having paid them well, demand results. They have no pigeonhole labeled, "Excuses." Of course, this requires money, much money, and they assess themselves accordingly. That it pays is self-evident; otherwise they would not continue doing it.

Only the great medical profession, widely as it touches public life has been blind to the desirability of such influential participation in community life, and has failed to appreciate that the trend of the times in all other professions, businesses and trades is toward a policy of publicity, assertiveness and aggressiveness in pushing the profession, if not the individual members of it, into the life of the community.

Ministers and churches have found the plan profitable for religion. They obtain publicity for their organizations and objects in the press and through their organization, the federated churches, make their influence felt in public matters touching their interests. The attorneys have their bar association and do much in the management of their profession and the education of the public in legal matters through the papers. All conduct their activities through a full-time, paid official.

Our Society must face the new responsibilities and do its share in seeking to regulate and overcome the adverse conditions. It is apparent that the people are in a receptive mood to learn about medical matters. This is evidenced by the interest manifested wherever and whenever public lectures and demonstrations on medical topics are given. It is indicated in the fact that nearly every large daily newspaper is featuring articles relative to diseases and their treatment, written in popular phraseology by well known medical men; and the newspapers pay for it;—Chiro's take notice. It is a common expression that one hears, "Dr. Brady or Dr. Evans says so and so."

The usefulness of this society would be increased were a committee on Publicity and General Medical Information added to the by-laws, whose duty it would be to arrange for public meetings, at which lectures should be given by laymen and physicians on public health and sanitation; the causes and treatment of diseases, history of medicine, etc. Also, to prepare articles for the press, setting forth in popular terms, the facts about medicine. It would benefit the profession as well as the public, and the newspapers would have a kindlier feeling toward the doctor. The proposition would be financed as provided in the by-laws, either by an increase of the yearly dues or by voluntary contributions. Agencies of this character already are at work, sponsored by

lay and medical organizations, namely, the "Tuberculosis Society," "Society for the Control of Cancer," etc. County societies have taken little or no part in the activities. Let the Polk County Medical Society lead out. Quackery may never be overcome; it can be held in check only by educating the public in matters medical. S. J. Holmes wrote: "Ignorance of laws of health, of the cause of disease, of how to avoid epidemics; ignorance of how to take care of children in the perilous periods of infancy; ignorance of how to secure the proper medical aid in case of sickness and how to take care of oneself when ill, ignorance in one form or another is probably the most potent of all the allies of the angel of death."

This society has a membership of 233 in good standing, being 98 per cent of the total number of practitioners in the county who can qualify for membership. The average attendance at the meetings in the past two years is 85 per cent plus; and the interest in the scientific programs and other activities is constantly increasing. It is a record of which we may all feel proud, especially when I tell you that in a nearby city with more than 1800 legally registered physicians, less than two-thirds are members of the county society, and the average attendance at the meetings does not exceed 120. Still, they congratulate themselves on having a great society, and so they have, but it should be much greater.

Membership in our county society is the means of obtaining admission to the State Society and the American Medical Association; an honor which no self-respecting doctor may deny himself. The dues in the Polk County Medical Society are but \$8 per year; \$5 of which goes to the Iowa State Medical Society, which provides for medico-legal protection against unjust malpractice suits, and the Society Journal. This leaves \$3 dues for the county society. Then, after deducting \$2 per plate for the annual dinner, and 80c per member allowed the secretary for collecting the dues, etc., we have only 20c per member left with which to defray other expenses, which is more than absorbed in deducting the Society's life member's dues. I leave the question to you as to whether this Society can carry out anything worth while with a deficient treasury. But we must "carry on." Too many of our profession have been too busy with their own personal interests, giving but little attention to the welfare of the profession at large; they are the logical leaders and should take their places as such.

Our Society has grown in membership and scientific attainment to the extent that monthly meetings, or nine meetings during the year at

which scientific papers are read, offers opportunity to comparatively few of its members to participate. We should consider the advisability of having semi-monthly meetings.

Among the new responsibilities assumed by this organization, the annual clinic takes front rank. While a few members whose counsel is invaluable, feared for the success of the new venture, I believe all are now convinced, however, that instead of dissension and discord, there has been created within the ranks of the society, a closer fellowship and a determination for greater endeavor. Mistakes were made; that could hardly have been avoided. We will profit by them hereafter. The influence of the clinic has gone beyond the boundaries of our state; it was of sufficient importance to claim space in the American Medical Association Bulletin. Let me read the item in part:

A County Medical Society Clinic

The Polk County Medical Society (Iowa) conducted a three day clinic in the hospitals of Des Moines, October 18, 19 and 20. This was the first effort made in this direction by a county medical society which is earnestly seeking to extend its service to its own members and to physicians of its state. The success that attended the first clinic has determined the Polk County Medical Society to make the clinic an annual affair hereafter. About 100 physicians from over the state of Iowa were in attendance, and the operative, medical and special clinics were conducted entirely by members of the Polk County Medical Society. Fortunately, Des Moines has five hospitals, all of which cooperated most cordially with the society in holding the clinic.

The program embraced clinics on internal medicine, general surgery, abdominal surgery, gynecology, oral surgery and surgery in other special fields. There were also neurologic clinics and cardiac clinics, while dermatology, roentgenology and syphilology were not neglected. As a matter of fact, the clinical program was very complete. In addition to the clinics, there were didactic lectures each afternoon, each lecture occupying fifteen minutes. These began at two o'clock in the afternoon and continued until 4:30.

"Cancer Week" must necessarily claim the attention of this Society, as well as the "Health Contest" at the Iowa state fair, both of which hereafter are to be annual affairs in this county. Another great responsibility awaits the society in the coming year, that of entertaining the Tri-State Medical Society that meets here next October. This society is second only in scientific attainment, and the prominence of the men engaged in the program, to that of the American Medical Association. Comprising as it does the

leading medical men of the states of Wisconsin, Illinois and Iowa, and is attended by the representative men from all the great medical centers of the country who participate in the programs. Let each of our members henceforth consider himself a committee of one to help the local committee on arrangements, and see that nothing is left undone to make this meeting the most successful in its history. Help to place Des Moines and the Polk County Medical Society on the map as a medical center.

A committee should be appointed, whose duties it shall be to collect the proceedings of this society, in-so-far as it may be possible, from its organization to that of the present time. These archives should be collected and perpetuated. To the discredit of the society, it apparently has no records of the proceedings beyond the year 1898.

The question of establishing a bulletin, to be printed at least bi-monthly, should receive serious consideration. Many county societies much smaller than ours have been issuing such bulletins for a number of years.

The present year has been one of great activity for this society. The experience has been enlightening and inspiring. The administration could have accomplished little had not the entire corps of workers done their utmost to carry out the plans initiated. The efforts of these men no doubt will extend with the same enthusiasm into the next administration, and more and greater things will be accomplished. Indeed, let the entire membership of the Polk County Medical Society give to the incoming administration its unstinted cooperation, such as it has given to the present one throughout the past year.

OCCLUSION OF THE CENTRAL RETINAL ARTERY

F. F. AGNEW, M.D., Independence

On August 15, 1921, Mr. P. B., age fifty-eight years, consulted the writer because of the following condition. Four days previously, while conversing with a friend, his attention was attracted by a blur in his right eye, which after a few minutes developed into total blindness of the eye. He could not tell when improvement began, but at the time of my examination, four days later, his vision was OD., fingers at one foot, OS, 20/50. Pupils were three millimeters in diameter, equal, sluggish to light stimulus and to accommodation.

*Presented at the Seventy-First Annual Session, Iowa State Medical Society, Section Ophthalmology, Otology and Rhinology, Des Moines, Iowa, May 12, 13, 14, 1922.

Otherwise the appearance was that of a normal eye.

Ophthalmoscopic examination showed a collapsed temporal branch of the superior retinal artery, the point of obstruction being about one disc diameter from the origin of this branch. The obstruction was complete and the remainder of the artery appeared as a glistening white streak. A large area of retina, consisting of approximately $\frac{1}{4}$ of the total area, including the Macular Field, was blanched in the center, fusing into a pale pink as it approached the portion normally supplied with blood. Though the point of collapse was definite, I was unable to determine the character of the obstructing object.

There was no history of pain, headache, visual disturbance, or other eye symptom preceding this occurrence. The subject has always been a healthy man, except that he has had epistaxis a great deal during his entire life. His family history is negative, no history of lues and the Wassermann was negative. Physical examination was negative, kidney function normal, and blood pressure 140 and 85, with no evidence of hardening of the arteries.

Treatment was immediately begun with massage of the eyeball, cathartics, heat and iodides. Progress was fair and at the end of a month he was able to read coarse print with his correction. When last seen in December, his condition had not improved, more and further treatment was considered useless. While the circulation returned to a moderate extent in the previously blanched field, vision did not improve accordingly, which in the judgment of the writer, was due to an atrophic change in the temporal side of the optic nerve, which was unusually white.

On August 29, two weeks after the first case, Mr. M. G., a man of seventy-two years, a stone mason by trade, consulted me, stating that on the day before while reading his paper, he suddenly became aware that the vision in his right eye was completely lost. There was neither pain, headache or other warning sign and his eye history was negative. He had worn glasses only because of his presbyopia. His habits have always been good, and he has been ill at no time since reaching adolescence. Venereal infection is denied and his Wassermann is negative.

External appearance of the eye is normal, pupils are four millimeters in diameter and are equal, the left responding to light stimulus with consensual reaction in the right. Direct light reflex lost, no light perception in any part of field.

The entire retina of the right eye is completely blanched and is of a greyish white color. All ar-

teries are totally collapsed, showing as pearly white streaks. The veins contain enough blood to give them color only. A pinkish yellow spot indicates the location of the macula. The left eyeground is normal with vision of 20/40. Both crystalline lenses are clear.

Report of his physical examination is as follows: Elderly man of good nutrition, arteries hard and tortuous, blood-pressure 140 and 70. There is a slight prostatitis with no symptoms, heart slightly enlarged with extra systole. Condition of mouth very bad because of extensive pyorrhoea. Urinalysis with kidney function test, reveals no disease of kidneys.

Treatment of a similar, but somewhat more vigorous nature than in the other case was carried out with total failure, as at the end of a month there was complete optic atrophy. There was however, a considerable return of circulation, indicating that the obstructing mass in this case was absorbed, but too late to be of any use in saving vision.

These two cases coming to me within so short a time, and having seen but one similar case some years ago, created a desire to learn more of the condition, hoping that I might be able to obtain better results with any similar case in the future. A short questionnaire was prepared and sent out to 102 physicians doing special work. Of this number forty responded with the following results: Thirteen cases were listed, diagnosed as thrombosis, and nine diagnosed as embolism. To the question "In your opinion, can a differential diagnosis be made in the living subject?" Six answered yes, six were doubtful, six had no opinion and twenty-two stated that it would not be possible, with the general trend of opinion toward a bad prognosis.

In one reply, in which the subject was discussed somewhat, this statement occurs. "Plugging of the central artery is not uncommon," and that, "A differential diagnosis is not of importance as the treatment would be the same in either case." He also mentioned the fact that two cases occurring recently in his practice, were those of young women who were at the time menstruating. This latter statement bears a relative importance to hemorrhage which is one of the recognized causes of embolism. He also states that the majority of these cases occur in the female sex, the exception being, people of advanced years who have atheromatous arteries.

In another reply is found this statement, "That the ophthalmoscopic picture is so entirely different in thrombosis and embolism, and that the systemic conditions differ widely so as to be a great

help in diagnosis." This statement does not coincide with one immediately following in the same questionnaire which is, "That it is very difficult to satisfy ones self as to whether the condition is due to embolus or to endarteritis." The writer finds it quite difficult to reconcile these two statements, or to co-relate the answers in general, though they are the expressed opinions of conscientious hard working men. Have we any right, however, to expect more when the number of cases is so small and the opportunity for study of this condition, so infrequent.

de Schweinitz, in his eighth edition, speaking of obstruction of the central artery, including thrombosis and embolism says, "That rarely an embolus lodges in the central artery of the retina, there being but five cases on record according to Coates." Fuchs, Fox and Theobald speak of either condition as being rare.

In the Reference Handbook of Medical Sciences we find the statement that, "Embolism of the central retinal artery is a very rare occurrence, probably more so than is generally believed; many cases so diagnosed being of some other cause. Also that "Many cases diagnosed as embolism are in fact due to spasm of the central retinal artery." Having seen a few cases of spasm of the retinal arteries, one of which I was able to observe quite closely, I am of the opinion that this condition occurs with greater frequency than either of the others, and that its relation to thrombus formation is very close.

Research was made of the literature from 1916 to 1921 inclusive, for the purpose of co-relating the facts included in case records. During this period there were placed on record, thirteen diagnosed cases of obstruction, of which two were cured, three improved and eight were permanently blinded in the effected eye.

Since undertaking the study of occlusion of the central retinal artery, the writer finds that the terms embolism and thrombosis are used in a confusing manner and it would appear, that in the minds of some, these two terms mean the same thing, and while a distinction matters but little as regards the treatment of the eye condition, a difference in the pathology does exist, and the treatment of the patient's general condition would of necessity be very different, when we can be reasonably sure of a correct diagnosis.

The actual pathology cannot be determined by any means known to us and must remain, to a considerable degree, a speculative problem. Some new knowledge has been added by the observations of Kraupa, who by the use of the Gullstrand-Nernst Ophthalmoscope on the back-

ground of the living retina was able to determine that the color of the macula, as has been thought, is yellow, that edema does exist in the retina in cases of obstruction of the central artery and that the post-embolic clouding of the retina is due to folds in the limiting internal membrane. This method will, in time, add much to our knowledge of the pathology which exists in these cases. This same author reported a case in which he was able to observe the obstruction pass along the artery, where at an intersection, it broke in two passing into separate branches of the artery. In such a case one would have little difficulty in making a diagnosis, though the opportunity is immeasurably greater than where the obstruction remains stationary. In cases so far studied by pathologists, very little information of a definite value has been given, since it is not always possible to determine, after death, whether the existing obstruction was embolic or thrombotic in character, owing to post mortem changes in the tissues.

Summing up the findings in the fifteen case records studied we find that in eight, or 61.4 per cent, there were symptoms such as obscured vision, headache, vertigo and wave like impressions which preceded definite occlusion for periods of a few hours to several months, and were probably caused by arterial spasms, the so-called vasomotor Crisis of Pal, which is a sudden constriction and dilatation of the vessel walls, and may give the impression of complete obstruction, accounting for the prompt re-establishing of the circulation in vessels which a few hours before appeared as collapsed and in which a diagnosis of occlusion may have been made. It is the opinion of such men as Virchow, Rokitsansky, Thoma, Jores and Koster, that this condition is associated with disease of the vessel walls.

At this point the writer wishes to speak of a case reported by J. W. Charles of a patient who, a half hour after arising in the morning, lost the vision in the right eye. Shortly after, a paracentesis was done, a dressing applied with the result that on the next day the patient had vision of 6/5 and a normal visual field. The conditions in this case compare closely to those which we are told belong to arterial spasm.

In the case reported by Scheerer, there was a history of such visual disturbances as have been mentioned which preceded the obstruction of a small supramuscular artery. The case came to autopsy with the following findings as to the eye condition; hypertrophy of the intima with complete destruction of the internal elastic coat of the artery. It is the opinion of this author that

such a condition speaks for a specific infectious factor.

It would seem that with the constancy with which syphilis is manifested in diseases of the eye, that it should be first thought of in any case giving the history of visual disturbances herein mentioned and that its confirmation or elimination is one of the most valuable points in diagnosis and proper treatment of the general and local condition.

The writer does not wish to assume a pessimistic attitude, but he is very sure that all present will agree that one day's time is a very short period for the absorption of any embolus, other than an air embolus, or of any thrombus. Consequently he is inclined to the opinion that a case of collapsed central retinal artery, treated or not, which recovers in so short a time, would be much more likely due to arterial spasm than to an actual obstruction.

According to the researches of Kearn "No cause can be found for embolism in 66.3 per cent of cases, so that a local disease of the artery is probable in the majority and it is the opinion of Harms that, "A diagnosis of embolism is justified; only when primary disease of the artery can be excluded and signs indicative of thrombotic occlusion are not present."

Of the number of cases histories here studied, 61.4 per cent gave a history of visual disturbance for some time prior to the onset of blindness. In other words, evidence of some condition of the artery which was productive of spasm, thrombus formation, or both was present. These figures correspond closely to those of Harms in connection with the absence of causes of embolism in cases of obstruction.

It is also the opinion of Lafon that obstruction of the central retinal vessels is most often due to an obliterative endarteritis producing thrombus formation, and that cases of cardiovascular disease are particularly liable to obstruction of the retinal arteries and that these patients are also the victims of visual disturbances.

While it is the opinion of all authorities that embolism of the central retinal artery is a very rare occurrence, largely because it is one of the smallest arteries in the body, and also because it takes off from the ophthalmic at such an angle that the entrance of a floating object would scarcely ever leave the larger and swifter stream for a smaller and more sluggish one, though its size might permit it to enter.

The conditions favoring the formation of emboli and their being thrown off into the circulation are quite numerous, yet not as much so as

are those favoring formation of thrombus. It is well for the physician to keep in mind those conditions favorable to embolus while obtaining the history in any case suggesting obstruction. Hemorrhage, heart disease, arterial ligations, fracture of the long bones and infection are probably the most important, as well as the most common.

Given a case of obstruction of the central retinal artery in which the chances for recovery of vision are, at best, very poor even though of short duration, any and every means which may give promise of some measure of relief should be tried, even to using methods, which in any other eye condition might be considered radical. Deep and vigorous massage, suggested and advised by Casey Wood, and the suction massage suggested and used by Wurdemann, combined with the rapidly acting vasodilators such as the nitrites, should be used. It is the opinion of the writer that deep ether anesthesia combined with massage would be very practical, primarily because of the effect of ether on the terminal arteries where it acts as a vasodilator in the second stage of anesthesia, before the temporary raise in blood-pressure has begun to recede. Should it be my lot to see another case, I am sure this method will be made use of with paracentesis as the final move.

The result of any treatment in a case of obstruction, depends more on the type of obstructions, whether it be an air embolus, a soft clot, or a hard mass from a heart valve vegetation. It is also reasonable to assume that the earlier an attempt is made the greater the promise of a good result, for should it be a thrombus, which is the most likely, its attachment will become firmer and its consistency greater as time goes on.

Had I, in my own cases, used more vigorous means of dislodging the obstructing mass, I am sure that in the case of the younger man I should have had even a better result, while in the other, even though the arteries were calcified, and a thrombus the probable obstruction, the result might have been some vision instead of a totally blind eye.

CONCLUSIONS

Our histories are many times too incomplete to give us the information on which to found a probably correct diagnosis.

Any disturbance of vision, not due to refractive errors or to changes in accommodation, being suggestive of disease of the arterial system, especially the retinal arteries should be given particular attention.

Since no cause can be found for embolus in 66.3 per cent of cases, and that in 61.4 per cent of cases considered the obstruction was preceded

by symptoms, largely disturbed vision for varying periods of time and being suggestive of disease of the retinal arteries, any case presenting symptoms of obstruction of the retinal arteries, not definitely embolic, should receive early and energetic general treatment combined with such local treatment as is in the judgment of the operator best suited to the case.

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Discussion

Dr. Edward P. Davis, Philadelphia, Pennsylvania (opening)—I have been very greatly interested in this paper because of several cases coming under my observation which pertain to the subject in hand. They were cases of toxæmia of pregnancy. The essayist has mentioned menstruation as a possible exciting cause of this accident. So far as we know concerning menstruation or the toxæmia of pregnancy, both of these conditions are attended with the formation of certain bodies in the blood which produce a temporary rise of blood-pressure. It would therefore not be at all strange, in view of the possibilities during pregnancy, that menstruation should be found to be the possible exciting cause of this accident. When we come to the toxæmia of gestation, in the present state of our knowledge, it is a condition of minute emboli which are formed in the placenta by bodies derived from the mother's blood. If we take that phraseology, which in the present state of our ignorance, is the best that we have, you can readily see that the loss of vision in women threatened with convulsions may well be the result of minute emboli carried from the placental site through the arterial system, of which the essayist has just spoken. To make a practical observation in these cases, viz., of disturbance of vision in women with convulsions incident to toxæmia, the ophthalmological department of the Jefferson Hospital has suggested the withdrawal of cerebrospinal fluid, and that has been followed by a marked improvement.

Dr. J. M. Patton, Omaha, Nebraska—I have very greatly enjoyed this paper. I do not know of any incident in our practice that gives us such a feeling of helplessness as these sudden closures of the central retinal artery. Fortunately, as Dr. Agnew has

said, they are pretty rare, but still we see more of them than we would like. The cases that I have seen have usually been more than twenty-four hours old; as they are sent in from more or less distant points, and at the time we get them, the chance of helping them is very poor indeed. As to the help that we can give them, the Doctor has covered that point. I have never tried out the treatment suggested by the last speaker, but it sounds as though it might offer some promise of helpfulness. The question of differential diagnosis between thrombosis and embolism is of no great moment, but it has seemed to us that the previous history and pre-symptom history are of importance. In most cases which seem to be due to thrombosis, the patient will give us history of temporary spells of visual dimness. In our experience in one or two cases, the patient has had these temporary attacks for a few days before vision closed entirely, while in what we called embolism, the blindness came on suddenly, simply a closure of the artery. We have had a number, two or three perhaps, of cases such as the Doctor has mentioned, where the embolus was small enough so that we could drive it on into the smaller arteries of the retina by use of nitrites, massage, relaxation, etc. I think that this is the only thing we can hope to do and the thing that we should attempt to do as early as possible. If it is small enough, we can give some hope of relief, but where you get a closure of the central blood-vessel by an object so large that it cannot be forced onward, I am afraid our hope of improvement is very slight.

MARKET MILK FROM A MEDICAL STANDPOINT*

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The chief aim of public regulation of market milk is to prevent the spread of disease, but the rules and standards adopted by most boards of health do more than simply make milk safe. They tend to secure clean, wholesome, attractive milk. These good qualities promote the use of milk and this affects supply and demand. Thus the sanitary control of market milk comes to have a commercial aspect.

The milk industry of the United States presents an interesting problem. It seems large—two million carloads of fluid milk are consumed annually—yet McCarriston in his recent Mellon lecture questions, "Is not cow's milk gradually becoming a luxury reserved for the rich?"

Political economists and practical farmers agree that the production of milk could be almost indefinitely increased to the benefit and conservation of the food resources in the soil. Graham

Lusk, Sherman, Hess, McCollum and others place the minimum of human requirements of milk at a figure that would necessitate double the present market supply, yet one of the main complaints of the large city milk firms is in connection with so-called "surplus milk."

Does board of health control complicate, or tend to solve this market milk problem? The answer at this time involves three other questions:

1. What limits the demand for market milk?
2. Does sanitary control tend to secure the most attractive supply of market milk possible?
3. Are doctors practically concerned with the increase in quantity as well as quality of market milk?

Answering the first inquiry. In cities of the United States of over ten thousand inhabitants an average of a little over two-thirds pint of fluid milk per capita is used daily—counting condensed milk, cream, and ice cream,—in smaller towns about one pint; on farms with milk cows, about one and one-half pints, just double the amount in the cities. On such farms live about thirty-one million of our population. The cities are made up largely of people who have come in from these farms, or of their descendents. Why have the city people cut their milk ration in half? Personal and family food habits are strong, even notoriously stronger are race food habits.

The branches of the white race to which city and farm population alike belong have been generous users of milk since the earliest records of time. Historians—from Herodotus down to H. G. Wells in his last book—picture our Caucasian ancestors swarming out of the central table-lands of Eurasia, driving with them their flocks and herds, whose milk sustained them on their warlike wanderings till they settled down to absorb or be absorbed by the conquered populations on the more favored peninsulas of Europe. Centuries later their own effete urban civilizations to in turn fall a prey to new waves of milk fed barbarians from the hinterlands.

On our farms—the hinterlands of our modern communities—this age long race demand for milk still persists, and it still satisfies itself with a generous allowance of the fresh product from the farm cow. The same demand must exist in the man who has moved to the city, and in his descendants, it is reasonable to believe; but this appetite is unable to find milk of a quality to satisfy itself. It is the milk and not the man that has changed on the journey to the city.

The perishability of milk is accountable for limiting its use in cities. Changes during the pe-

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riod of its conversion from farm milk to city market milk can profoundly alter its attractiveness as food. Deterioration in taste, wholesomeness, safety and keeping qualities are largely proportionate to distance in time between cow and consumer.

Distribute in the city a supply that will be considered as wholesome and attractive in every way—including comparative price—as is the fresh product from the healthy cow, and it is believed it would meet a demand equal to that in the country. There is evidence that conditions in the city might make for even a greater demand than on the farm. If better milk were to be delivered in the city than has been used on the farm it might still further stimulate consumption.

A 100 per cent increase in city demand for milk seems easily possible, if quality and price were right.

This brings us to the second question: Can board of health control secure for the city family, at a reasonable price, milk as good in every way as the farmer uses on his table?

Milk regulations include pasteurization, inspection, bacteriological counts, sediment tests, and scoring or publishing of the results of inspection and tests.

Pasteurization alone, unaided, fails to satisfactorily bridge the gap between farm and city consumer. Before milk reaches the pasteurizing plant, half of it has had at least sixteen hours in which to deteriorate, under circumstances that peculiarly favor the incubation of unattractiveness.

The farmer knows his product is to be indistinguishably mixed with that of many other producers and the whole subjected to a purifying process; all incentive to deliver to the plant a clean sweet attractive milk is lacking. These qualities cannot be restored to milk by pasteurization, it retains all the flavors, odors, acids and other products of deterioration due to neglect and mishandling.

But pasteurization makes milk safe. It certainly and inexpensively kills the germs of all disease known to be ever carried by milk, and thus it adds greatly to its acceptability. Pasteurization is indispensable in the face of the menace of bovine tuberculosis alone. Pasteurization is growing in popularity. In some large cities it is compulsory for all milk sold to be first pasteurized. Whether or not the process itself detracts somewhat from the excellence of milk is a moot point. Stale pasteurized milk is much more unwholesome than stale raw milk (it may even be poisonous); again, some methods of pasteurization are

better than others. It is probable that the last word for or against pasteurization has yet to be said, but by itself alone the process fails to solve the milk problem.

The results of regulation by the method of bacteriological tests and inspections alone, have been well exemplified in certified milk—the product of the private milk commissions operating in some of our largest cities for the past twenty-five years. Certified milk was sent to the Paris Exposition, where, weeks old, it was indistinguishable from fresh milk. The milk commissioners—for the most part private physicians—link to their organizations groups of farmers who contract to produce and deliver milk to patrons in the city, under regulations imposed by the commission.

These regulations amount practically to an aseptic technique. The handling of the milk is controlled by bacteriological tests and counts all the way from the cow to the consumer. By such medically controlled standards, these doctors, concentrating with pedantic care on quality alone, regardless of cost, succeeded in delivering to their patients and patrons, hundreds of miles from the herds and days after milking, a product better than was ever known on a dairyman's own table up to that time.

However, after twenty-five years certified milk itself forms but a small fraction of the commercial milk supply in even the few cities where it is furnished. Its cost appears prohibitive to all except the very well to do. But the methods of the milk commission have been adapted to their needs by practically all public health authorities, and the more the inspection and test methods are employed, especially in conjunction with pasteurization, the more clearly does it appear possible to distribute, at a reasonable price, milk in every way as good, safe and attractive as the fresh product from the healthy animal.

Innumerable experiments by both government and private agencies have proven conclusively that the essential factors in preventing deterioration in milk are few, simple and easily negotiated by average intelligence on the farm, if inspected and checked, from time to time, by a little competent authority from the community board of health. Clean, healthy herds, adequate cooling facilities, proper utensils and provision for thoroughly sterilizing the same—the latter not necessarily on the farm—these are the essentials. Other accessories are helpful and may be made subjects of inspection and scoring.

Bacteriological checking, or counts, at point of distribution or pasteurizing, measures each pro-

ducer's results with his sanitary equipment and methods. These counts show him how successful he is in getting milk to the consumer, undeteriorated, uncontaminated, wholesome and attractive. And on his measure of success is based, in part, his milk pay, or indeed his right to sell milk in the city. Thus inspection and bacteriological tests control both the means and the incentive to furnish good attractive milk.

There is some tendency in the large cities to rely solely on bacteriological counts and pasteurization, leaving farm inspection and scoring methods to be applied, if at all, by the competitive dealers, who will find their milk barred out if it cannot pass the strict bacteriological and sediment tests at the city gate.

But the educational and constructive features of friendly inspection on the farm have seemed indispensable in the formative stage of board of health control in which we of the Middle West find ourselves.

Board of health control is comparatively new everywhere, much has to be worked out and learned by experience, but progress is being made, even though slowly. A greater volume of milk is being handled from year to year because a better quality is being delivered. The increase in the past ten years is about 16 per cent. The sanitary aspect is being recognized as the key to progress in the industry. The commercial potentialities of sanitary control are filling more and more pages in the many new strictly commercial books on the milk industry.

Clyde L. King of Wharton School of Commerce, in his recent book "The Price of Milk," estimates "The total cost for all purposes for protecting herds and livestock, for hygienic conditions on the farm, for refrigeration in transit, for pasteurization and for refrigeration in delivery total around one cent per quart, a portion of which is for business advantage and a portion incident to the proper protection of the public health." This is the opinion of the highest authority in the United States on milk prices at present volume of trade in good sanitary milk. With production of good milk greatly increased, this slight advance in cost might be more than overcome by several accompanying factors.

First of course the lowering of overhead in the greater volume of business. Then if a more uniformly high quality of milk is sold, individual preferences for dealers would be done away with, solid blocks of city territory would be contented to take from the same distributor, greatly lessening distribution cost. Better milk will stand the transportation from remoter, cheaper land, where

costs are less. When the call for much more and better milk comes it will bring the less costly milk. Good milk and lots of it means inexpensive milk.

The last question is: Are we as doctors interested in quantity as well as quality increase in the milk supply? We have of course the layman's interest in more and better milk for the good of our families; and furthermore, we are interested in more good milk for the successful treatment of patients, the tubercular, the nephritic, the dyspeptic, the typhoid, the marantic, the convalescent, the lactating mother, the artificially fed infant.

We are also interested in milk from the standpoint of preventive medicine.

Milk is a balanced ration; its values almost perfectly distributed to the four elements of food. In addition, its availability as food is high; its elements more assimilable as human nourishment than the same elements calory for calory from other sources. On account of this it is difficult to find perfect substitutes for the solids of milk. With regard to milk sugar, the most abundant of these, perfect substitution is impossible as milk sugar is found nowhere else in nature.

Thirty-one million of our population on the farms consume on an average, two and one-quarter pounds of milk sugar a month; an amount equal to the war ration of commercial sugar. City dwellers consume only one-half as much milk sugar.

The withdrawal of a large proportion of natural food from the diet over a long period of time is not without insidious hazard to health and well-being, so biological chemists tell us. May not the decreased consumption of natural milk sugar and the simultaneous marked increase in use of artificial sugar (from nine pounds per person yearly in 1820 to eighty pounds in 1915) have some connection with the apparent great increase in certain diseases of metabolism, as for example diabetes. The lowered diet of sugar during the war and after was accompanied by a decrease in the rate of mortality from diabetes in the United States. The first decrease in a generation.

In southern Italy and British India diabetes is particularly prevalent. Of all Caucasian territory these two regions are least well supplied with milk animals. A great contrast existing between northern and southern Italy in this respect. India's cows are all overworked draught cattle, so nearly starved as to be able to little more than nourish their calves. No market milk industry exists.

In the United States diabetes is more urban than rural and the writer has been impressed with

the number of diabetics observed whose diet since childhood has been deficient in milk.

All this may mean simply that a more generous ration of well balanced highly assimilable milk, prevents the individual from running to excess in carbohydrates especially artificial sugar.

It possibly might mean that milk sugar or something else in milk tends to maintain an unbroken carbohydrate tolerance, even when an excess is taken of commercial sugar.

It has been proven that milk sugar behaves in the intestine differently from other sugars and for the healthy adult more hygienically.

The undeniable excellence of Metchnikoff's buttermilk diet for adults is today attributed more to milk sugar than to special bacilli.

The possibility of "something else" in milk besides the balance, availability or sugar, having a preventive influence on diabetes and other metabolic disease, invokes the theory of vitamins. Milk is credited with possessing to a marked degree most of these occult substances if the animals are properly fed—which by the way furnishes another matter for inspection in milk control. Growth, well-being, resistance to disease, seem to depend on a sufficiency of these vitamins in the diet. A total lack of them having been proved to cause certain essentially nutritional diseases, notably scurvy and beri-beri.

Good milk is one of the widely accessible foods that contain a balance of the different vitamins as well as of the caloric elements, and we may well have a lively speculative interest in the effect on our large city populations of a 100 per cent increase in their milk ration.

The medical profession has not only interest, but responsibility in the larger success of public health control of the milk supply. Boards of health were invested with this authority, on account of what doctors have been saying and doing about milk during the past thirty years.

Cooperation with public health authorities in milk control is peculiarly fitting to the general practitioner of medicine. The methods and standards are ours, worked out and proved by the private practitioners of the milk commissions. Milk regulation is a local affair. Local problems differ. Each community large or small is left to regulate its own milk problem in its own way. That way should represent the reaction on the local board of health of all the local profession. As a rule these authorities welcome intelligent cooperation from all the profession. Also the producers of milk for most communities in Iowa are within the clientele of the communities' doctors. On country calls, tuberculin tests, bacteriological

counts, sanitary methods and equipment, fall naturally within the doctor's range of comment and influence. The responsibility of the profession, however, reaches beyond cooperation with authorities and producers. In its enthusiasm over the revelations of bacteriology the medical profession released to the consuming public over a period of years a wealth of information on the dangers of bad milk. Books, bulletins, periodicals, lectures and cartoons, inspired from medical sources, pictured to the public the ghastly menace of typhoid, cholera infantum, tuberculosis and diphtheria, lurking in the milk bottle. This has diminished since control and responsibility have been lodged in public health bodies. Rosenau showed the inconsistency of such cartoons years ago. But milk is a delicate tissue. The casting of so much suspicion on it has left the city consumer's appetite sadly dulled. The dawning of the day of good milk finds the public with a decided hangover of indifference to the values of milk in general. It doubts if much good milk can be delivered in the city; is uncertain where to get it and how to recognize it when gotten, and wonders if after all the value of good milk would be worth the risk of suffering from the bad.

Such an attitude of indifference delays the solution of the milk problem. It spoils the market for good milk and cheats the consumer out of an available supply of perfect food.

We are under obligations to do what we can to dispel the indifference to good milk which our past zeal against bad milk created. The least we should do, it would seem, is to inspire as much agitation about the values of good milk as we did about the perils of bad; and do it in much the same way.

Authorities on vitamins warn us that for the sake of those whom the purse or appetite limits, we should commend the use of anything even partly made up of good milk, like ice cream, buttermilk, condensed, powdered or even synthetic milk, so necessary is it considered to increase the milk ration. But of course the better, more attractive phases of milk should receive the greatest emphasis, to the end that there may result the largest possible increase in the demand for good market milk.

Nor should it be thought beneath the dignity of medical societies, through committees or otherwise, to sponsor the values of more and better milk, nor of doctors as individuals to lend their aid to any sensible lay endeavor to this same end.

When we have adequately emphasized the values and possibilities of good milk and plenty of it, the responsibility will rest on the public to

adequately enforce regulations and secure its full requirements in quantity and quality of market milk.

Discussion

Dr. Daniel C. Steelsmith, Dubuque (Opening)—I rather appreciate that the section on preventive medicine comes first with the Iowa State Medical Society. The essayist has dwelt especially on the function of the boards of health in control of the milk supply. On investigation I have found that the milk situation varies in each and every community, but after a careful study of the exact conditions of the community I think a program of education should be mapped out. Such a program would stimulate the production and use of milk. In a city like Des Moines, no doubt with a year's work in disseminating information to both the producers and the consumers, you would have increased the supply and consumption of milk perhaps 100 per cent. It is merely a matter of dissemination of information. The producer must be made to realize that he has certain obligations, and the consumer must be advised as to the conditions underlying this problem. As our essayist has so well pointed out, we have been crying out about scarlet fever, diphtheria, typhoid, and what not, in connection with milk, until the people are skeptical. We should inform the public as to the essential qualities of good milk. There are but two kinds of milk, good and bad. The consumer must be advised that the control of the dairy industry is such that we will eliminate the man that tries to sell fertilizer in a milk bottle. Then the consumer must know something about the proper care of milk after the distributor has delivered it to him. The essayist has said that in Iowa communities the average length of time from the moment milk is produced until it reaches the consumer is practically sixteen hours. But there is another eight, ten or twelve hours during which this milk is kept in the care of the consumer, and that is a particularly interesting period as far as the board of health is concerned. As to the price of milk, in our own state of Iowa we need interest ourselves very little in this phase of the question. That will regulate itself. In regard to the efficiency of the measures of control, we have four essential features which must be considered, and I would suggest that these are of importance in the order named: (1) The visible dirt; (2) The bacterial count; (3) The solids content, and (4) The butter fat. No one process that may be used will control the milk supply. Adequate control involves a combination of the four factors named.

Dr. Frank M. Fuller, Keokuk—It seems to me that this is one of the most practical problems that has come before us. We talk of disease of various kinds, then forget the very thing that is at the foundation oftentimes of disease. We have had a very interesting paper on one of the conditions that arise in diseases of children, and we find that the moment the child begins to vomit the physician commences to chase from one kind of artificial feeding to the other or

flies immediately to cow's milk. We know the difficulties that we have with the milk supply. In talking to our people about milk I think we should begin using plainer language. In a problem of this kind Dr. Steelsmith is probably one of the most competent and capable men in the state of Iowa, and yet he states that one of the essential things we should consider in connection with milk is the quantity of dirt it contains, and we go out among our people and speak of the dirt in milk. It will not take very long to convince people that dirt is injurious if instead of calling it dirt, we designate it as manure. If when people say, I see dirt in the bottom of the bottle, you will tell them that it isn't dirt, but cow manure, you will get somewhere. We should talk a little plainer about this problem. In my home town I find children who cannot take this or that milk because it has so changed in quality that the child cannot assimilate it. I tell the mother that she must specify to the distributor the quality of milk she wants, but she will reply, "When I tell the milkman this he says, 'That is all right, I have seventy people on my waiting list.'" I say to her, "If you will get the dairy list of this man and find how many of his customers belong to the baby welfare league, then instead of saying to him, I am going to quit, tell him that seventy members of the baby welfare league or some other organization are going to quit this morning unless you standardize the quality of your milk," you will not have much difficulty with the milk problem. I think the last sentence of the essayist is the keynote of the whole thing. The medical profession knows what good milk is and should correct the conditions that are not as they should be. Dr. Murray says that after we have obtained all the facts in regard to these things, then the dissemination of these facts to the public is the essential thing. This will practically give us almost complete control of the situation. The essayist referred to the difficulties incident to the distribution of milk in cities. In Iowa we do not have much of a problem in this respect, as we live in small communities. We are getting milk from wagons and trucks, it is not a matter of bringing it in on the train. We know our milkman, call him sometimes by his first name. If your butcher sends you tainted meat, if your grocer sends you a peck of rotten apples, he hears from it very quickly. But day after day and month after month and oftentimes year after year you doctors, and I, and your patients will permit the milkman to bring in tainted food every day in the year, and then say, I wonder what is the matter with the baby. It is a problem we should take up as a State Society, we should take it up in our county societies, and if the things that are in the planning of the State Medical Society today are worked out, I trust that in a short time an influence will be brought to bear which will solve some of these important problems.

Dr. D. N. Loose, Maquoketa—Thus far the subject of milk containers has not been discussed. I think the milk container is a very important part of this

problem. No doubt all of you have noticed the milk cans that are carried from the creamery back to the farm. You have seen them rolling around in the farm yard. You have seen the bottles taken back to the milk station after being carried around in a wagon or truck for several hours, the milkman putting his fingers inside the bottles to pick them up as it is easier to carry them that way, then he fills them and perhaps sticks his finger through the paper cap. We will not get very far until we have evolved a technic for the man who milks and coming from that on down to the consumer. Any good housewife will tell you that the reason milk or cream sours is because the container isn't clean. Now it is just as important to have a technic of taking care of this liquid from the time it is taken from the cow, as it is to have a surgical technique. One would not say that in the operating room we should sterilize some things, but not other things. The container is a very important element in this problem.

Dr. Fred Moore, Des Moines—I think Dr. Loose's statement in regard to technic is the reason why we get better milk in the larger places than in the smaller. Such technic as is required is not a thing that will be carried out voluntarily and with equal efficiency by all people. Therefore in order to insure a good milk supply some standard must be established and some one must see to it that this standard is maintained. I should like to refer to our own local milk situation. I believe that our experience here has been just what Dr. Steelsmith prophesies. If information regarding good milk is spread abroad and the farmers are instructed how to produce good milk, the quality of the milk supply will be right. That is exactly what has happened here. Our local dairymen have told me that the amount of milk consumed here has greatly increased. Six years ago we had little regulation in Des Moines. The best milk we could get was that obtained in the shortest interval after being produced. Now we can get better milk from the larger areas and which has been produced at a longer interval, simply because we have an established system of inspection the efficiency of which is recognized. The bacterial count has been reduced to an average of 25,000 to 30,000, and that is better milk than you will get in five or six hours from miscellaneous sources. One of the essential things in connection with a good milk supply is the requirement that either the tuberculin test should be routinely used, or that the milk should be pasteurized. Pasteurization should be so standardized that it will be practical in all communities and for all individuals to carry out. I want our essayist to take back to Cedar Rapids this fact: That the Health Department of Des Moines is to be complimented on the piece of work they have been able to accomplish during the last five years in the improvement of the milk supply. Whereas formerly there was little or no standard, at the present time all milk sold in the city must either be pasteurized or tuberculin tested, and have a bacterial count not to exceed 75,000.

Dr. Edward P. Davis, Philadelphia—Living as I do in a dairy state, I have been profoundly interested in the paper and discussion. One bright morning during the war a patriotic old English lady was walking along a road and saw a stalwart young man milking a cow. Her patriotism at once suggested that this man should have been in the army, and she stopped and looked at him through her spectacles and said: "Young man, why aren't you at the front?" He never stopped milking, but said: "Because, ma'am, the milk is at this end." Now for any one to come to Iowa and talk concerning milk is simply to repeat the statement, "the milk is at this end," here where you have the greatest agricultural state, and one in which dairying is carried to a very high degree of perfection. I wish only to give very briefly my experience in Pennsylvania and in the East generally. Of the success of certified milk produced scientifically there can be no doubt, and that means the work of the Walker-Gordon producing firm and others. They feed definitely to produce a certain grade of milk, and at the farm of the Walker-Gordon firm in Plainsboro, New Jersey, the feed ration is so calculated as to furnish a given protein content as well as a normal fat content. In the vicinity of Philadelphia, we have a number of very expensive fancy herds of Jersey and other cattle, and we recognize perfectly well the danger of the Jersey cow becoming infected with tuberculosis and the practical disadvantage of a very high fat content. As to the suggestion of certified milk, unfortunately this is available only to those who can pay large prices. When it comes to the average consumer and the average producer of milk, and when it comes to the manure in the milk, I am sorry to say that with us there are persons so ignorant that if they missed the slight tang given by the manure in the milk they would think they were not getting country milk. One has to educate the consumer as well as the producer. Practically speaking, no one can do more or better than you are doing in the way of inspection and pasteurization. But with us the weak point is here: How is the producer to put the milk in the hands of the consumer of the milk in a prompt and accurate manner? It is a business proposition. Much of the difficulty incident to city supply lies in the bad methods of delivering milk, for with us the producers of milk are not always successful deliverers nor are they necessarily successful business people. If this difficulty can be remedied wherever the producer comes in contact with the consumer, very much will be accomplished. I am grateful indeed to the essayist and those who have discussed this paper. I have learned much of great value.

Dr. Granville N. Ryan, Des Moines—Our mortality in Des Moines is very much lower than it was five years ago. In our work over the city we do not see nearly as much gastrointestinal trouble as we did at that time, it is rather the exception. The leading dairy here has a very excellent technic for handling milk when it is being gathered at the dairy. The bottles

and cans are very thoroughly sterilized with a sodium solution, cooled, and then filled with milk and packed in ice on the trucks which bring them to the city and directly to the distributing station. All the dairies are open to inspection, and they invite the members of the various women's clubs to inspect these dairies and distributing stations. It has been my observation that during the past ten years the mortality has been lowered very considerably. I know that Dr. Moore, who has seen as many of these cases and possibly more than any other pediatrician of the state, will verify the statement that our mortality has been lowered and especially in Des Moines, as we get excellent milk and also buttermilk and as a rule our babies do very well on buttermilk—it is wholesome and clean and contains cream. Des Moines is getting good milk, and that is really I think the point after all that we should consider—we are not getting these gastrointestinal disturbances.

Dr. Steelsmith—After hearing this discussion I feel that I would be a little remiss if I failed to mention that a year ago, in 140 milk tests during the month of May in the city of Dubuque, the bacterial count averaged better than 2,000,000 per c.c. For the benefit of the members in Des Moines I will inform them that they were getting here, a surplus of our milk. Pasteurization does not solve the problem. During the month of April of this year the average bacterial count of seventy-four dairies located in that portion of Illinois, Iowa and Wisconsin which forms the country-side of Dubuque was 110,000. It takes insistent work to improve conditions. Pasteurization alone does not solve the problem. The solution must come from the combination of all efforts. The tuberculin test must be applied. I do not want to feed my babies cow manure even if it is cooked, I do not want to feed my babies bovine tubercular germs even if I know they are retarded in growth. And do not allow yourself to be misled; pasteurization, while of great value, does not kill all bovine tubercular germs.

Dr. A. H. Byfield, Iowa City—Taking up that part of Dr. Murray's paper which deals with the nutritive value of milk, I can only confirm his statements most strongly. If we remember that the human body is made up of various salts and that calcium and phosphorus are among the most important ones of these, it is evident that unless the human animal is an exception to all the rules of nutrition, he must have an abundant supply of them. At present at least, milk seems to be the best source of calcium phosphate. Following some experimental work, we have come to the conclusion that it is very difficult to produce rickets in rats who are in a good state of nutrition even if we use a diet very low in calcium or phosphorus. The offspring of these rats, however, developed the disease to a marked degree. This

is an argument in favor of the administration of milk to mothers. In regard to the effect of milk on children, one may say that it is possible in a surprisingly large number of cases to determine how much milk the child has taken by examining the teeth. If the teeth are good, we may judge that it has had a fair amount; if the teeth are poor, then I think we are safe in assuming that a small intake has been the rule. Dr. Davis has brought out the question of Jersey milk. I went into this matter with the agricultural college of this and other states and have found that the teachers of animal husbandry are inclined to believe that many Jersey calves cannot take their own mother's milk. If this is the case why should we presume to allow this food to be used by babies? The importance of sanitary control of milk supply is very great. Some time ago we had an excellent example of the influence of this fact. A dairy man sent us bad milk with the result that digestive disturbances in the ward were unusually common. The dairy inspector found that this man had a filthy barn. The milk supply was changed and from that time on our troubles ceased.

Dr. Murray—I would like to speak of one point which Dr. Steelsmith emphasized to me privately. In his work he found a great tendency on the part of producers to cooperate with him; that is, the farmers listened to what he had to say about good milk and made an effort to comply with his recommendations. I think this is a very helpful sign. A word in regard to the container. On the statute books of Iowa there is a law which provides that the return of a milk container that is not clean is punishable by a fine. In some places I believe the breach of this law is more common than its observance. As regards the matter of obtaining information on this subject, I have endeavored to get information from all Iowa cities of over 10,000 inhabitants, but was not able to obtain figures that I could present at this time. About one-third of the boards of health gave me good reports, which showed that the milk supply of Iowa is in quantity about the average of that in the United States as a whole. Even in this state, which Dr. Davis so highly compliments as to its milk supply, we are not ahead of the other states in the quantities of milk used in cities. I haven't any figures that would be at all helpful in a general way. I particularly regret that I was not able to secure statistics from Des Moines, because it is very probable that these would have been interesting and instructive. In large cities it is true that where good milk is obtainable more of it is taken, and the price usually is not raised. This subject is one we can properly follow up, for when we are trying to increase the quantity of milk the people use we are promoting a home industry. While that is not a very high objective, at the same time we are all interested in getting a larger milk supply to our cities.

DIAGNOSTIC SURVEYS BY DIAGNOSTIC COMMISSIONS FOR ASYLUM POPULATIONS

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The relation of focal infections to the cause, pathology and rational treatment of so-called epileptics and the equally so-called insane, is of increasing interest if not imperative importance. Thus, during the last eleven years, I have found focal infection present in all of more than one thousand consecutive cases of "epilepsy," otherwise more properly called chronic convulsive toxemia. Thus, again, during the last four years, at the New Jersey State Hospital, Dr. Henry A. Cotton has found focal infections constantly present in certain forms of "insanity," otherwise more properly called chronic psychotic toxemia. A distinguished neurologist, Dr. Herman H. Hoppe, has just reported to me of a case in which he had clinically demonstrated that a focus of infection in the frontal sinus had been the cause of a confusional insanity. In the practice of the same distinguished neurologist, some six or eight years ago, infection of the colon was similarly demonstrated to have been the cause of a simple melancholia that had kept a useful lawyer incarcerated in a sanatorium for three years and that cleared up in three weeks after the underlying condition had been surgically corrected by an operation at my own hands. An eminent internist, Professor Martin H. Fischer, but recently had a case of acute maniacal disturbance to clear up following the removal of painless apical abscess involving but a single tooth. Multitudes of similar instances could be recounted from these and other equally reliable sources. Those here given are cited only to illustrate the rapidly broadening experience of the general profession in all parts of the country. In other words, as indicated not only by these instances but by a rapidly growing literature, the etiologic role of focal infections is being very generally recognized and acted upon—everywhere except among the classes in which they are productive of the most tragic results. I allude to the epileptics and insane now incarcerated in the asylums of the country—the word asylum being used to designate a purely custodial institution as distinguished from a hospital which is a curative institution. I desire also to make clear that very generally, the responsibility for this condition in the asylums is due to the "system" and not to the indifference or incapacity of their medical officers.

Fundamental Facts and Their Significance

The experiences of Dr. Cotton among the "insane" and of myself among "epileptics" are parallel in several important particulars. Thus, (1) all cases—all!—as determined by physical and x-ray examinations, have splachnoptosis; (2) all cases—all!—, that have been subjected to surgical exploration, have had focal infection of the intestinal tract associated with visceral displacements and bacterial involvement of the mesenteric and mesocolic lymphatics; (3) other foci occur in order of frequency, in the teeth, tonsils and accessory sinuses; (4) still other foci occur occasionally in the genitourinary organs of both sexes and in other organs and structures. The constant occurrence of intestinal infections in these cases is explained by the fact that they may occur independently of any other focalized infection; that they always exist in presence of foci in the teeth, tonsils and sinuses; and that they often persist after all other foci in teeth, tonsils, sinuses and elsewhere, are eliminated. The observations of Dr. Cotton and myself further agree in the particular that, as shown by histories given, these foci, or some of them, wherever located, are antecedent to the convulsive, psychotic or other toxic phenomena. The relationship of cause and effect is therefore logically inferred. The demands of the law of cause and effect are, however, further satisfied by the fact that, in many of these cases, the removal of the cause has resulted in the subsidence of the effect—or, in other words, in the cure of the patients. These observed and amply substantiated facts relate to the welfare of hundreds of thousands of "epileptics" and "insane" in asylums; to the welfare of as many more who ought to have active treatment; to the happiness of their millions of relatives and friends; to the many millions of dollars loss, economic and direct, incurred by the state. The possible significance of the great underlying truth is, therefore, so profound that the problem, viewed from this angle alone, ought to be neither ignored or deferred by either the profession or the public.

Independent Diagnostic Surveys

The etiologic and pathologic findings just recorded, while amply confirmed by incidental cases at the hands of various practitioners, by at least one large institution and, in a more or less desultory way, by various other institutions, yet rest essentially upon my own experience of eleven years confirmed by that of Dr. Cotton covering the last four years. To both Dr. Cotton and myself our experiences, severally or jointly consid-

ered, are conclusive. There are many members of the profession who maintain our views. There are, however, others, especially those who were taught the older doctrines, who are honestly incredulous. There are still others who, without considering the facts for a moment, turn from them and their deep significance with resentment if not actual hostility. I consider it unfortunate that some of this latter class are in charge of institutions that control the welfare and destinies of many thousand patients of the type under consideration. But in view of the fact that they do occupy such positions and in view of the great human interests at stake, I urge that it is of the highest importance that the fundamental scientific facts of causation and pathology should at once be put to the most crucial test. This is the basis for such a test: If I have found focal infections with associated definite pathology in one thousand consecutive cases of "epilepsy" and if Dr. Cotton has found similar conditions in a similar or larger consecutive number of certain types of "insanity," logically the same findings must be possible in any other thousand consecutive cases of "epilepsy" or in any other thousand or more consecutive cases of similar types of "insanity." This fact points not only to the practicability but to the importance of independent, thorough and comprehensive diagnostic surveys of asylum populations. Such surveys along the lines of focal infections, even if confined to a few institutions would tend either still further to confirm or to disprove the findings and conclusions of Dr. Cotton and myself. But, while asking for the most rigid determination of facts, this suggestion is not offered in a spirit of banter or controversy but solely in one of constructive co-operation with progressive medical officers of these institutions. The sole objective should be to determine the incidence of focal infections among "epileptics" and the "insane." How many have infected and poison-producing teeth or jaws? How many have similarly diseased tonsils? How many have suppurating sinuses? How many have displaced and consequently infected intestines? How many have foci of infection in other organs or structures? How many have actually infected blood streams? To what extent have there developed secondary foci in other organs and structures?

Diagnostic Commissions

Diagnoses in asylums now are made by the staffs of the respective institutions. They may be classified as neurologic or psychiatric or neuropsychiatric, or psychoanalytic. Only rarely if at all do they embrace a careful appraisal of ac-

tive physical conditions but are confined chiefly to enumeration and appraisal of phenomena connected with what are called the mind and nervous system. What is here insisted upon is that, in every case, there shall be a highly specialized diagnosis of every possible physical and clinical feature, all determinations to be made by the most modern scientific methods. Among modern scientific methods of diagnosis none has been more definitely evolved than the group study of cases. The newer knowledge with respect to focal infections, with its revolutionizing influence on all medical science, more than any other one thing, has forced the development of group practice. In no branch of scientific practice, diagnostic or therapeutic, is group cooperation so imperatively demanded and so thoroughly impossible as in the existing generally prevalent system of asylum treatment of "epileptics" and the "insane." The whole situation would seem, therefore, to call for the appointment of a group made up of certain specialists to act for the present as a commission to conduct a diagnostic survey of an institution or institutions under the control of the state. It ought first to be provided with ample physical facilities—a general analytic laboratory, a bacteriological laboratory, an x-ray laboratory. The personnel of such a commission ought efficiently to cover the departments of analytic chemistry, including haematology, bacteriology, rentgenology, dentistry, laryngology, ophthalmology, with an abdominal surgeon and an internist to conduct the general physical examinations and to interpret and correlate the findings of the technical specialties. Of course, as neurologists comprise the staff of the institution, a neurologist would not be on the commission, the very object of which would be constructively to check up the neurological diagnosis already made. Then, too, as all medical officers of these institutions must either favor or oppose the whole diagnostic movement they deserve to be spared from the equivocal position of determining facts that relate to their preconceptions, practices or possible personal interests. The functions of such a commission would be purely diagnostic and its tenure would end with the completion of the diagnostic survey.

Clinical Values and Diagnostic Interpretations

One motive for the appointment of independent diagnostic commissions is to secure for the patients not only of the highest technical skill available but examinations by methods calculated to reveal rather than to conceal the truth as to their exact condition. Thus, for instance, I have had

cases referred to me with the statement that there was nothing the matter with the tonsils when a little pressure with a laryngeal mirror would squeeze pus from one or more crypts; others have come with the assurance that the x-rays revealed normal teeth when a properly secured film showed apical abscesses at from one to a dozen different teeth; others in which the abdominal viscera, x-rayed with the patient always prone, was reported normal when one picture taken with the patient erect at the time the barium was ingested; another, taken six hours later, with the patient prone; and another taken after twenty-four hours with the patient erect, demonstrated extreme gastro-coloptosis with fecal stasis due to ileal bands and to retardative angulations. These conditions always imply to the observer familiar with living pathology of the abdominal viscera, certain other definite invariable conditions, namely, infection of the intestinal follicles, infection with enlargement of the lymphatics and venous stasis of the mesenteric circulation. These instances are cited to show the importance of first, an adequate diagnostic equipment; second a correct diagnostic technique in determining the underlying physical facts; third, a proper appraisal of their clinical values when, fourth, they are interpreted by persons practically familiar with the living conditions to which they relate. The appointment of diagnostic commissions would, furthermore, insure the actual use of adequate equipments which, it is known, have been generously furnished to more than one institution but in which no general diagnostic surveys such as here outlined, have ever been so much as attempted.

The Economic Phase

It seems almost a disgrace that where humanity, where life and health or what is more precious than either, sanity, are concerned it should be necessary to quibble about the chips and whetstones of cost and profit. In the last analysis; however, money becomes the measure of values and it is therefore necessary to take it into account in connection with the proposal for diagnostic commissions. Of course the members of such commission must be paid and to secure the proper service, they ought to be reasonably well paid. But the medical profession has always been ready to make sacrifices for the public good and would probably do so in the present instance. This being true probably from \$10,000 to \$12,000 would secure the services of a corps of experts for a period of from six weeks to two months to make a diagnostic survey of an institution of ap-

proximately fifteen hundred inmates. Laboratory and x-ray equipments will cost about \$25,000 or a little over \$6 per capita. On this basis, at the New Jersey State Hospital, an institution of 800 admissions annually, the resulting savings on maintenance of patients alone has been estimated at \$90,000 per year. A conservative estimate, based upon the findings of the National Committee for Mental Hygiene as to the number of insane in asylums, indicates that in such institutions and in alms houses and reformatories, there are more than 335,000—a third of a million—insane in the United States who are receiving public aid. Add to this 14,937 epileptics and 40,519 "defectives" in institutions a year ago, and add to all the increase in each class for the year and it will be seen that the public is today supporting in excess of 400,000 persons in what, with but a few honorable exceptions, are purely custodial institutions. These figures, on the basis of savings at the New Jersey institution, show possible savings for the entire country of \$18,000,000. And this is on maintenance alone, no account being taken of the economic value of productive energy restored to the community by recoveries. Of course while considering economics it would be sentimental if not silly to allude to the restored happiness of thousands of now bastiles' inmates and to the joy of their millions of relatives and friends.

An Appeal

This article is written as an appeal to the general medical profession for cooperation in securing the diagnostic survey of asylum populations. There is probably no one subject that appeals in a practical and humanitarian way to so large a number of general practitioners as does the care of epileptics, the insane and associated classes. The figures already given show that on the average there are about three of these cases to every general practitioner in the United States. They occur about equally in every section, in every neighborhood. The institutions are crowded and their medical officers, many of them of the most progressive type, are appealing for such change in the "system" that they can do something actually curative for their cases. In the circumstances each member of the medical profession is asked to use his or her influence with asylum directors, state charity commissions, legislatures, and governors, to secure the equipment and personnel necessary to give these unfortunate classes the benefit of the latest and best development of science in determining the fundamental facts of their illness.

AIDS TO DIAGNOSIS IN MEDICINE*

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We approach the subject of this paper with some misgivings, as at the outset we must disclaim any originality or the outlining of any new discoveries. We are attempting rather to call to mind aids to diagnosis which we feel are often overlooked or neglected.

We think the medical profession, both general practitioner and specialist, might be condemned for laxity in methods and a tendency to the development of a routine leading to "snap" diagnoses. The treatment of patients without adequate investigation, is unquestionably in vogue.

We maintain that a careful, painstaking written report of the personal and family history, followed by a thorough physical examination of a patient, is a *sine que non*, before an opinion can possibly be expressed in regard to the individual patient, proper advice given or adequate treatment instituted.

Hughlings Jackson in 1870 pointed out that the study of the individual patient comes before the study of the disease, for a disease is rarely typical but is modified by the characteristics of the patient.

In the effort to standardize hospitals the greatest stress has been very rightly laid upon case histories, for they are certainly the basis for the intelligent and scientific care of the patient. With an average clientele, it is beyond possibility for any practitioner to remember the details of the illness or disability of any patient for any length of time, and entirely impossible for scientific reports to be made with clinical data to support them unless careful and painstaking histories are taken and as careful physical examinations made and recorded. To those who are content with merely keeping a copy of prescriptions written, or who record in a day-book or visiting list some sign indicating the service rendered and charge to be made, we urge the adoption, at once, of hospital methods of case history records. A trial of the complete method will certainly convince the doubters of the wisdom of this routine.

The younger generation of physicians is thoroughly grounded in the methods of history taking and the importance of accurately kept records, to the physician, to the hospital and to the patient.

During the sessions of the school of medicine of the University of Louisville, the histories and

physicals of all new patients in the city hospital wards are taken by the students and when corrected by the staff of instructors, are typed and made part of the permanent record of the hospital. A duplicate of the history and physical is filed in the library—like diseases and conditions grouped, as a reference library for new classes, and the original is returned to the student for his files. This relieves the interne of much routine work and gives him more time for other work on the ward and for special laboratory investigations.

The Clinical History

The clinical history consists of five parts, and is not complete without all five headings are dealt with:

1. *Anamnesis*, or an account given by the patient or friends of the life of the patient previous to the time of the examination. Leading questions should not be asked until after the patient has told his story.

2. *Status Praesens*—This includes the physical, chemical and biologic examination made by the physician. We wish it were possible to emphasize forcefully enough the importance of the education of the special senses in their application to physical diagnosis, and the correlation of these findings by an active, discriminating brain. The outcome of this is the development of a clinical sense, that ability which comes with training which enables one to place a precise value upon symptom or sign. Through the aid of this clinical sense one is able to arrive at a diagnosis by the differential, direct or indirect method.

3. *Clinical Impression*—The recording of one's impression, of a case, even though a positive diagnosis is not or cannot be made, is an excellent discipline for every practitioner be he surgeon or internist. Pre-operative diagnoses or impressions are as important, perhaps more important, than an ante mortem diagnosis in a purely medical case.

4. *Catamnesis*—This is the subsequent history of the patient including notes on the course of the disease, the kind of treatment used and the results thereof.

5. *Epicrisis*—This is the final judgment of the case with discussion of all findings. If the surgical or autopsy findings are available they should be summarized under this heading.

Medical literature has contained many articles of late, emphasizing the tendency of the profession to neglect the art of physical diagnosis. We feel that in a measure this criticism is just, though we do not believe, as has been said by one author, that physical diagnosis is a lost art. This criti-

*Presented before the Tri-State Medical Society.

cism is borne out by the questions asked by most life insurance companies in their medical examination blanks, "Has this examination been made without removing the clothing covering the chest?" How can a chest examination be made through one or two shirts? Yet it is constantly being done.

Inspection, palpation, percussion, auscultation, mensuration! How pregnant with meaning if properly applied. Keeness of vision, seeing, feeling, and hearing understandingly can only be acquired by constant application, thorough mastering of the normal, and its comparison with the abnormal. We are constantly endeavoring to impress this fact upon the younger clinicians in their teaching, that the healthy student himself is the best clinic possible for the sophomore student upon which to begin his practical work in physical diagnosis. The student must first be taught physical diagnosis from the physiologic standpoint, normal breath sounds, normal heart sounds, normal heart dullness, normal resonance, normal chest measurements, etc. The sounds and conditions produced by pathological conditions can then be more easily recognized. Closer co-operation between the so-called pre-clinical branches and the clinical in medical schools must be had. The well rounded general practitioner is the product we are endeavoring to send out from our medical schools, not specialists in any branch.

The use of the special senses, with instruments of precision, and by chemical, bacteriological and biological methods is rapidly bringing medicine into the domain of a science. It is being said that only the special senses and instruments of precision are necessary in diagnosis, that the laboratories are not needed, that they are refinements for which the patient must pay but add little to the outcome of the case. We do not believe it necessary to combat this idea in the presence of this audience but rather to briefly call attention to certain of the diagnostic aids, which can and should be used by the practitioner in his daily work. Many general practitioners do not use these aids, fearing they need too elaborate an equipment and for this reason do not familiarize themselves with method or technic. As an illustration, a group of eight practitioners recently in attendance at a city hospital clinic, not one knew anything of the phenolsulphonephthaline test for kidney efficiency or had ever seen it applied. These men had missed using a valuable aid in the estimation of kidney efficiency, and their patients the benefit of this procedure. This test is so easily done and at so little inconvenience to the patient, that it should be used as a routine in all

patients in whom disordered function of the kidney is suspected. It is a routine procedure in the Louisville City Hospital and is considered a most valuable diagnostic aid.

Gerstley¹ has sounded a note of warning against too great emphasis being laid upon pathology in reasoning in regard to the epicrisis of a case, to the exclusion of the physiologic point of view. He states "To the medical man of the future, far more important than the problem, 'What are the pathologic findings in this intestine, in this heart, in this kidney?', will be the diagnosis, 'What is the tolerance of this intestine to food, the capacity of this heart or this kidney for work?' The community will demand of us that we apply all our skill in keeping the child at play or at school, the adult at work. This physiologic point of view has given rise to a change in our conceptions of therapy infinitely more fortunate than anything developed from the pathologic standpoint."

Functional Tests of the Kidneys

This as an introduction to the mention of the physiologic or functional tests of the kidney which are so little used. The value of the concentration urine test is too little appreciated. It is not necessary to put a patient upon the elaborate Mosenthal or other diet, but carry it out with the patient living his usual routine as to food, drink, exercise, rest, etc. All fluid intake is carefully measured, recorded and totaled for the periods from 8:00 a. m. to 8:00 p. m., and from 8:00 p. m. to 8:00 a. m. The day urine is passed at two-hour intervals and saved in separate bottles, and the night urine saved in one specimen. The specific gravity, amount, and reaction of each specimen is carefully taken and recorded. If there is a fixation of the specific gravity of less than nine points, or an intake of 25 per cent more fluid than the total output of urine, or if there is a nycturia, or a larger amount passed during the night than during the day, there is a serious functional disturbance of the kidney. This may be found in the absence of albumen and casts. This tells us what the kidneys are doing, their capacity for work. If in addition to this there is a reduction in the percentage of phenolsulphonephthalein recovered in the one and two-hour specimens we have learned more than can be told from a dozen chemical urinalyses.

These are tests which can be made by any one and should be a routine in all patients in whom the kidney function is questioned. There is absolutely no difficulty in obtaining the co-operation of the patient in carrying out the directions for

1. Journal A. M. A., June 11, 1921, p. 1633.

these functional tests in detail. The patient realizes that the results are of vital interest to him and there is no trouble in obtaining his fullest co-operation. Emerson has done excellent work in his studies of nephropathies and his latest report² calls attention to the necessity for a study of the temperature and albumin concentration curves in chronic nephritics—as all patients with chronic nephritis show, at times, slight rises of temperature and definite changes in the blood and urine.

Preventive medicine is economically important. Emerson points out (*loc cit*) that the kidneys are the third organ of importance as a cause of death, and regular examination of kidney function in the apparently well can not be too forcefully emphasized. Do not be content with a chemical and microscopic examination of the urine, but learn the capacity of the kidneys for work.

Blood Chemistry

Of what value is the newer blood chemistry as originated by Folin and others? Estimation of the retention of nitrogenous products in the blood is of very great value in the summing up of a case, especially as to prognosis. Total nitrogen, urea nitrogen, urea, and creatinin in excess in the blood corroborates the functional test and clinical findings. To illustrate: A graduate nurse on private duty complained to the physician in charge of the patient she was nursing, that she did not feel well, she had a temperature, headache and her feet were swollen. He asked for a specimen of urine, and it was almost solid with albumen after boiling. She came to the hospital and was admitted to the metabolic ward under Doctor John Walker Moore, professor of research medicine. She gave a history of a recent attack of tonsillitis, the hospital admission diagnosis being acute toxic nephritis, which any tyro could have made. The following is a resume of her case:

Age twenty-eight. Entered hospital January 17, 1921. Chief complaint, swelling of feet, hands and face; drowsiness and headache; decreased urinary output. On January 9 had a chill, followed by swelling and soreness at angle of right jaw, with pain over right antrum accompanied by discharge of thick bloody pus, which persisted three or four days and gradually subsided. Had an abscessed tooth, which was extracted five months ago, with three more found abscessed and later extracted.

January 17, 1921, blood-pressure 130/70.

Urinalyses		
	January 17	January 20
Color	Amber.	
Appearance	Very turbid—smoky.	
Specific gravity	1043	1007
Albumen	Plus 4. Solid cake.	Less.

Microscopical	Large number fine and coarse granular casts. Leucocytes and red blood cells.
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Blood Chemistry

	January 17	19	20	22	24	26	Feb. 8
Total Non-protein							
Nitrogen	61.8	98.4	81.	68.	42.	31.2	32.6
Urea nitrogen.....	37.5	51.7	49.	39.	21.	13.	14.3
Creatinin	6.	6.	5.	4.4	3.	2.9	.4
Uric acid.....	5.					4.5	
Plasma							
Bicarbonate.....	51.9	48.5		53.2		58.	
Alveosolar Co.....	32.5						
Vol. %							
Blood-pressure....	130/72	115/70					

January	18	19	20	21	22	23	26	30
Fluid	c.c.							
intake....	1180	1090	1090	1165	1010	773	1000	800
Urinary								
output...	264	369	602	1120	1007	1718	1065	711

6 points variation in specific gravity in two hour specimen on the 21st.

8 points difference in specific gravity in two hour specimen on the 30th.

On February 12 the patient was discharged. The kidneys were able to concentrate, fluctuating twelve points daily.

We believe the blood chemistry findings were of the greatest aid in the care of this patient during the acute stage, and the subsequent treatment much more intelligently carried out with the blood chemistry known than if it had not been done.

We would specially emphasize the importance of blood chemistry, as a routine in surgery as a means of ascertaining the operative risk to the patient. This is specially true in genitourinary surgery. We believe some fatalities in prostatic surgery might be avoided if careful blood chemistry examinations were made.

The finding of creatinin above normal limits is of especial prognostic importance, especially in acute surgical conditions of the genitourinary tract.

In this connection we would state that a regular part of the training of undergraduates is an attempt to teach them bio-chemistry in their junior year and a practical application of these methods at the bedside in their senior medical work. The general practitioner need not fit up a laboratory for the carrying out of these tests if he is too busy, as laboratories are available where they can be carried out, if he will send to them a specimen of oxalated blood. He should, however, familiarize himself with the normal limits of the various

2. Journal A. M. A., Vol. lxxvii, No. 10.

nitrogenous products and the significance of their increase.

The following are the upper normal limits of the various blood chemistry findings :

Total non-protein		
nitrogen	25-35	mg. per 100 c.c. blood
Urea nitrogen.....	12-16	mg. per 100 c.c. blood
Creatinin	1- 2.5	mg. per 100 c.c. blood
Uric acid.....	1- 2.5	mg. per 100 c.c. blood
Plasma bi-carbonate.....	54 to 77	
Alveolar Co.....	40 to 45	Volume %
Blood sugar.....	80-120	mg. per 100 c.c. blood

Pollinosis

No class of sufferers, perhaps are more appealing, than those subject to pollinosis or food idiosyncrasies, resulting in bronchial asthma, hay fever, the urticarias, eczema, angio-neurotic edema, erythemas, diarrhea, etc.

Much valuable original work has been done in the study of anaphylaxis and allergy by many observers, yet the average general practitioner seems to think but little of the possibilities of this field of endeavor.

Bronchial asthma has long been considered as hopeless and incurable until these studies were begun and sufficient evidence is presented by many observers to warrant the statement that in fully 50 per cent of cases the cause can be determined and successful treatment instituted.³

There is no difficulty in diagnosing an attack of bronchial asthma, so typical is the history and clinical picture of obstructed respiration, character of breathing, auscultatory signs, etc. Looking at the condition from the physiologic standpoint its etiology becomes apparent. A foreign protein, acting upon abnormally sensitive nerve fibers in the mucous membrane of the upper respiratory tract, through the nerve centers cause a spasm of the muscles of the large and small bronchi—resulting in a typical attack of bronchial asthma. The irritation may be confined to the nasal mucous membrane causing typical suffusion, sneezing, burning, lacrymation and nasal discharge of a so-called hay fever attack.

Differentiated from the typical bronchial asthma may be mentioned the so-called asthmatic bronchitis, due not to protein irritation but to a bacterial infection either direct or to the bacterial protein, engrafted usually upon a more or less chronic bronchial irritation, so-called cold or rhinitis. This type should be borne in mind and ruled out if results from protein therapy are to be expected.

Protein sensitiveness may be demonstrated by

the intradermal test or the cutaneous test, with every argument but especially that of safety, for the cutaneous method.

The flexor surface of the forearm is bared and cleansed. Small cuts are made with a sharp scalpel, deep enough to draw serum but not to cause bleeding. On each cut is placed a protein dissolved in a drop of 1-10 normal sodium hydroxide solution. A control upon which the hydroxide solution but no protein is placed, is used for comparison.

In from ten minutes to half an hour the proteins are washed off and the reactions read. A positive reaction consists in the formation of a raised, urticarial wheal surrounding the cut which must measure 0.5 cm. or more in diameter. A wheal less than this in diameter is considered suspicious but not positive—and those larger are indicated as one, two or three plus.

Patients suffering from asthmatic bronchitis do not respond to the ordinary protein reaction though they may to the bacterial protein. A careful inquiry into the habits of patients regarding diet should be made in case of a modified reaction or an entirely negative reaction. Certain articles of diet, which are eaten regularly, but sparingly eaten, may not cause evidences of allergy, but the eating of a large amount of the offending material may cause an attack.

Duke⁴ reports food allergy as an occasional cause of abdominal pain. He reports cases in which intradermal skin test showed reactions to the same food which had apparently caused the abdominal pain or indigestion. With the pain were associated nausea and vomiting, and occasionally gaseous distention, diarrhea with mucus and less frequently purpura, edema and hives. Duke explains the pain and other symptoms as due to the allergy caused by contact between the sensitive gastrointestinal mucosa and the food protein.

Many proteins have been isolated and are available for diagnostic purposes. The following are recommended specially to be used routinely: horsehair or dandruff; cat hair; feathers; the pollen of sunflower, rose, June grass, red top and ragweed; egg; milk; cereals; meats; chicken; potato. Our experience with the bacterial protein has not been satisfactory, although Walker and Goodale report 10 per cent positive reactions in sixty patients suffering with asthma.

After the diagnosis of the offending protein the specific protein treatment should be employed, the endeavor being to desensitize or render the patient immune to the offending protein. In food

3. Walker Oxford Looseleaf Medicine.

4. Archives Internal Medicine, 28, 151. (August, 1921.)

idiosyncrasies the omission of the food found as a cause or strongly suspected, as in the case of suspicious skin readings, is usually sufficient. Where there is bacterial, pollen or animal emanation protein irritation, the inoculation by subcutaneous injection of the offending protein should be recommended. The injections should always be controlled by skin tests of the strength of the solution to be injected. That is to say, if there is a reaction to 1 to 5000 dilution, the first injection should be of a solution not stronger than 1 to 10,000.

The treatment should be begun sufficiently early in seasonal allergy to complete the course of treatment before the usual time of the attack. Otherwise serious anaphalaxis might result.

Basal Metabolism

The subject of endocrinology has been a most alluring one. There are however, certain doubters. Dr. Cushing states,⁵ "We find ourselves embarked on the fog bound and poorly charted sea of endocrinology. It is easy to lose our bearings for we have, most of us, little knowledge of sea-faring and only a vague idea of our destination. Our motives are varied. Some unquestionably follow the lure of discovery; some are earnest colonizers; some have the spirit of missionaries; and would spread the gospel; some are attracted merely by the prospect of gain and are running full sail before the trade wind." Many other observers are optimists and judging by their writings are better seafarers than those referred to above.

Perhaps one reason for this difference of opinion is that no two persons suffering from endocrine disorders present the same symptoms, and the difficulty of recognizing in those cases of polyglandular intoxication in which endocrines predominate.

The thyroid gland has been more closely studied, perhaps, than any of the internal secretory glands. One of the main functions of the thyroid gland is to regulate the intensity of combustion in the body.⁶ Two general functional disorders of this gland are recognized—hyperthyroidism, or Graves or Basedow's disease, and hypothyroidism or myxedema. In the former basal metabolism is increased, in the latter it is decreased.

The patient which presents the typical symptoms of a thyrotoxicosis the condition can be diagnosed by any one, but there are few in whom all the cardinal symptoms are found. It is in those cases which present but few of the cardinal symp-

toms and which the general practitioner usually sees first and diagnoses as neurasthenia, that the aids to diagnosis must be used.

The symptoms which should be borne in mind in the diagnosis of a case of thyrotoxicosis are persistent tachycardia, enlarged thyroid, fine tremor, exophthalmos, widening of the slits between the lids, dissociation of the movements of the eye ball and those of the upper lid, inability to maintain convergence of the eyes, profuse sweating, watery and painless diarrhea, rapid and shallow respiration, weakness and other signs of myocardial degeneration, lymphocytosis, insomnia, loss of flesh with good appetite.

Thyrotoxicosis seems to exert its influence principally upon the autonomic nervous system, made up of the sympathetic system and the vagal autonomic system.

The Goetsch or epinephrin test for determining thyrotoxicosis is unstable and unreliable; as positive reactions are found in so many other conditions than thyrotoxicosis. Epinephrin solution is injected intramuscularly, and its effect upon the pulse rate, blood-pressure, muscular tremor and subjective nervous symptoms are carefully noted over a given period of time.

In certain cases there is a predominance of the sympatheticotonia, in others the vagatonia; in certain cases there is an involvement of both systems. In the patient presenting the mixed type of symptoms the diagnosis is frequently in doubt and in these the determination of the basal metabolic rate is a most valuable diagnostic aid.

The chemical transformation of the products of digestion within the body, to its demands of nutrition, constitutes metabolism. Total metabolism may be expressed in terms of energy, and the heat unit, or large calorie, is commonly used for this purpose. The large calorie is the amount of heat required to raise one kilogram of water to one degree centigrade of temperature. Following the lead of Lavoisier, workers in this field of investigation, have been able to develop the fact that heat production can be measured by the oxygen intake and carbon dioxide output, thus indirect calorimetry.⁷

Several types of respiratory apparatus are in use in indirect calorimetry; the closed circuit apparatus of the portable unit type devised by Benedict; the smaller portable unit type of Jones, and the gasometer type using Haldane method of gas analysis.

Basal metabolism is the heat production of an organism at complete muscular rest after a fast-

5. Journal A. M. A., Vol. lxxvi, 25, p. 1721.

6. Means, Journal A. M. A., Vol. lxxvii, No. 5.

7. Basal Metabolism, John Walker Moore, Kentucky State Medical Journal.

ing period of fourteen to eighteen hours. The rates vary with age, sex, height, weight, food, muscular activity, temperature of patient, certain diseases, drugs, etc.

Disorders of the endocrine system affect the basal metabolism decidedly causing an increase or a decrease according to the glands affected. Involvement of the thyroid gland in which there is an increased activity and secretion causes an increased rate with great regularity. Very severe cases show a plus 75 per cent or more, severe cases plus 50 per cent or more and moderately severe cases show a plus 50 per cent or less.

Engelbach has shown that an involvement of the posterior lobe of the pituitary gland causes an increased metabolic rate. Fevers, carcinoma, pernicious anemia, cardiac diseases, lymphatic leukemia, pulmonary tuberculosis and certain drugs, such as thyroid extract, caffeine, adrenalin, cause an increased rate.⁸

The estimation of the basal metabolic rate is a functional test of the thyroid gland and can be looked upon as a diagnostic aid of the greatest value. As McCaskey has demonstrated, in certain conditions, such as psychoneurotic disturbances and those presenting circulatory disturbances, as bradycardia, tachycardia, cardiac myasthenia and certain arrhythmias, fine tremors, hyperidrosis, loss of weight, slight temperature disturbances and leucocytosis can be definitely differentiated from hyperthyroidism. Cases with symptoms of psychoneurotic instability and tachycardia, with or without thyroid enlargement, may be difficult to diagnose and a basal metabolic reading is of the greatest assistance. In highly nervous individuals, however, the first reading may show a slight increase, this being due to the muscular instability of a nervous person, rather than to a thyrotoxicosis. In these patients a second test should be made. Basal metabolism is of value also in diagnosing a simple obesity from an obesity of endocrine origin.

Readings between a minus eight to a plus ten per cent may be considered within normal limits.

Ill fitting mouth pieces, nose clamp, etc., has made it necessary for one of us (Dr. Moore) to invent a combination nose and mouth piece, which enables the patient to breathe with perfect freedom and great regularity. As the original mouth-piece and nose clip causes the patient to be much irritated, an increase in the reading of the basal rate often occurs.

8. Basal Metabolism, Dr. John Walker Moore, Kentucky State Medical Journal.

Of What Value, Then, Is the Basal Metabolic Rate?

The diagnostic value of basal metabolism in endocrine disorders is no less important than its value in determining the proper method and outline of treatment. In brief, it may be said, in ductless glands disorders the basal metabolic rate determines whether the method of treatment used has been beneficial, or of no value, or even harmful. For instance, in goitre therapy, it serves as no other means at our disposal in indicating the effect of certain lines of treatment. In management of hyperthyroidism, whether it be carried out by means of surgery, x-ray, or what not. It offers a definite means whereby the thyrotoxicosis can be measured from time to time, thus enabling the physician to direct more intelligently the proper line of treatment.

In hypothyroid cases, whether it be of a congenital or of a post-operative type, our line of thyroid feeding can be accurately determined by ascertaining from time to time the metabolic rate. In hypopituitarism it is of value in diagnosis and guiding treatment.

The question is often asked, is the metabolic rate a measure to the patient's ability to withstand thyroidectomy?

This question should be answered emphatically no. The rate gives information of the degree of thyroid intoxication, but in no way does it signify that the patient would be able to stand the superimposed stress of operation. We do know, as has been pointed out by Boothby that the higher the metabolic rate the greater the stress to which the patient is being subjected, and the greater the consequent reduction in his reserve power. He states as a general rule that preliminary ligations are less frequently indicated with patients having rates below plus 50 per cent, and very rarely with patients having rates below plus 40 per cent. We agree with this author that the mortality of thyroidectomy is lower in cases with basal metabolic rates below plus 50 per cent, but we do not feel that we can concur in the statement that preliminary ligation is mainly indicated in cases with rates below plus 40 per cent. If the mortality rate is reduced by preliminary ligation, why not ligate in all cases preliminary to thyroidectomy? It is found not only in our series, but also in most all other reports, that there is a mortality rate in patients whose basal metabolic rate is below plus 40 per cent.

The basal rate does not tell us the duration of thyroid disorders, nor is it an index to myocardial degeneration. Thus, a patient in a state of remission may have a very slightly increased rate; but as a result of previous thyroid exacerbation, his

myocardium might have suffered hypertrophy and degeneration with a marked reduction of reserve forces, even to the point of decompensation. It is obvious—that in such a case the metabolic rate would not serve as an index for an operative risk. So we conclude that in cases with a rate below plus 40 per cent in which thyroidectomy is contemplated, the decision should not rest upon the basal rate alone, but upon surgical judgment.

The Roentgen Rays

The roentgen rays offer us one of our most valuable aids in diagnosis. Physical findings are confirmed by them and often they reveal unsuspected pathology. By means of the rays the internist is able to locate various foci of infection, to verify the outlines of the heart and visualize chest conditions, especially pleural effusions, pneumonias and tuberculosis. McGowan states "In the diagnosis of tuberculosis in children, the roentgen ray is a most valuable and reliable evidence."⁹ Rosenblatt writes "It is commonly accepted that the roentgen ray usually shows structural changes much earlier than physical examination, and in many cases where the physical examination is negative, the roentgenogram is positive."

With the aid of the fluoroscope, barium and enema one is able to demonstrate esophageal gastric and intestinal pathology. With the fluoroscope also, the size of the heart and aorta, the excursion of the diaphragm, mediastinal and lung conditions are usually clearly seen. By no other method is it possible to visualize suspected pathology.

By means of intraperitoneal injection of gas we are able to outline all abdominal and pelvic organs, viz: diaphragm, liver, spleen, kidneys, uterus, tubes and ovaries, and in conjunction with oxygen enema the colon is clearly shown. Adhesions to the diaphragm, adhesions of the intestinal coils to the parietal peritoneum, omental fixation, fibromyomata of the uterus, ovarian tumors, enlarged livers and gall-bladders can be made out of the intraperitoneal injection of gas. One of us, (Dr. Turner) in his work at the Louisville City Hospital, as yet unpublished, has not only been able to show the normal uterus, tubes and ovaries, but the gravid uterus, showing its gradual increase in size and appearance of fetal bones. Positive diagnosis of pregnancy has been made as early as three months. It has been found of service in certain doubtful cases to diagnose presentation and position.

Danby and others by intra-ventricular and in-

traspinal injection of air have been able to demonstrate the cerebral ventricles, and by changed relations to localize intracranial neoplasms, and to differentiate the different forms of hydrocephalus.

Orendorf has reported rather important observations by means of direct peritonoscopy. By these direct observations within the peritoneal cavity, he and others have been able to examine the under surface of the liver, gall-bladder, peritoneum and female pelvic organs. The value of this direct examination over an exploratory laparotomy is evident.

The value of the ray to the orthopedist is paramount, for in no other way is he able to tell as accurately the position and severity of fractures, the results of his manipulations in bringing the fragments in correct apposition and alignment, and the various pathological bone conditions.

To the genitourinary surgeon the ray offers the only positive evidence of renal calculi, and verifies his suspicion of ureteral and vesical calculi.

By the injection of certain solutions impenetrable by the rays, we are able to determine the extent of infection of the pelvis, of the kidney, vesical diverticulæ, tumors, dilated and thickened ureters, etc.

Functional Diagnosis of the Heart

William Harvey writing in the seventeenth century, states that "the heart is the beginning of life; the sun of Microcosm, even as the sun in his turn might well be designated the heart of the world; for it is the heart by whose virtue and pulse the blood is moved, perfected, made apt to nourish, and is preserved from corruption and coagulation; it is the household divinity which discharging its function, nourishes, cherishes, quickens the whole body, and is indeed the foundation of life, the source of all action."

Perfect functioning of the heart would imply a state in which all the qualities of the cardiac structure are normal and coordinate. If there is any derangement of the qualities, the question is then asked, to what degree does the disturbance effect the efficiency of the whole organ?

The recognition and significance of cardiac disorders can usually be arrived at by clinical study combined by the use of various technical methods.

The clinical symptoms and physical signs, though of utmost importance in the study of cardiac conditions, probably do not indicate the exact level of cardiac efficiency. It is for this reason that technical methods as the sphygmograph, polygraph and electrocardiograph have proven themselves valuable aids.

9. British Journal, Tuberculosis, Vol. xii, No. 4, October 18.

Polygraph

It must be admitted that a wonderful advance in cardiovascular diagnosis has come through the use of such instruments as the polygraph and the electrocardiograph.

Long before the electrocardiograph had been perfected, workers, as Mackenzie, with the polygraph, showed characteristic variation of the a, c and v waves, which made it possible to interpret definitely the various cardiac arrhythmias.

That the "a" represents the beginning of auricular systole, the "c" the beginning of ventricular contraction and the drop of the v wave, the opening of the tricuspid valves, cannot be denied, even in the light of the electrocardiograph findings. The polygraph, therefore, is invaluable in diagnosing the various cardiac arrhythmias, and owing to the compactness of its mechanism, and the simplicity of its manipulation, the physician is no longer justified in saying that this or that patient has a cardiac arrhythmia without determining its type.

Electrocardiograph

The electrocardiograph may be said to be in its infancy. Nevertheless, workers with this instrument of precision, have brought to light many invaluable phenomena taking place during the cardiac actions. Not only can the various types of arrhythmias be accurately established, but the preponderance of one ventricle over the other when present, its almost always clearly depicted. Special emphasis should be laid upon the electrocardiographic changes that are associated with myocardial involvement. Such conditions as bundle branch block and arborization block, may be shown in an electrocardiogram long before any serious clinical symptoms have developed.

The results of the study of the cardiac impulse along with x-ray and post-mortem findings, are promising—nevertheless, much data is yet necessary to make this field a useful adjunct in cardiac diagnosis.

Of the less technical methods may be classed blood-pressure and muscular efficiency tests.

The value of the former method is familiar to all of us, and will not be dwelt upon. Of the latter, many methods as hopping, climbing steps, walking up inclines, dumb bell exercises, etc., have

been advocated. While any one of these methods are valuable aids in testing the cardiac reserve power, in a beginning stage of weakened myocardium, nevertheless they fall short of their purposes in the advance stages of myocardial insufficiencies.

Gall Bladder Drainage

Direct drainage of the gall-bladder by the Lyon Meltzer method is one of the distinct advances in the diagnosis and treatment of disease of the gall-bladder and ducts. Meltzer's suggestion that magnesium sulphate solution injected directly into the duodenum has the effect of relaxing the common duct sphincter and causing a contraction of the gall-bladder, thus emptying it of its contents—Lyon proved clinically. Lyon states, "We can make a differential diagnosis between cholecystitis, cholelithiasis, and choledochitis in a more scientific manner than by any other method yet advanced."

With the patient fasting for twelve or fourteen hours, a duodenal tube with metal tip is swallowed, the stomach contents aspirated and the patient swallows the tube to the third marking. The patient lying on the right side the tip passes into the duodenum in fifteen to twenty minutes, evidenced by the tug and the character of the fluid aspirated. This aspiration may be done by the vacuum bottle or by the syringe. The first fluid is usually bile free and of syrupy consistence. Seventy-five c.c. of a twenty-five per cent solution magnesium sulphate is injected through the tube or allowed to flow by gravity. Lyon describes the fluid obtained, first from the common duct light in color, second from the gall-bladder, thick and dark, third from the liver itself, clear lemon yellow.

Repeated drainage by this method has been found most beneficial in a number of conditions, so-called "billiousness," recurrent headaches with nausea, chronic indigestion with attacks of colic, chronic constipation, catarrhal jaundice, gallstones, etc.

We might go on indefinitely, there are so many diagnostic aids which could be mentioned but our time is limited and we feel we have mentioned the principal ones which to our mind are too little used.

ACTINOMYCOSIS: DIAGNOSIS AND TREATMENT*

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Actinomycosis occurs in the head and neck region in over 60 per cent of the cases. It occurs in the appendix in approximately 15 per cent of the cases. One should therefore, consider actinomycosis as a diagnostic possibility when examining tumors of the head and neck or persistent sinuses of the abdomen, especially when post-operative.

In the region occupied by the middle western and northwestern states it is important that actinomycosis as a pathological entity be kept in mind. In a recent study Sanford and Magath found that of 119 cases collected from the literature forty-one (35 per cent) of the patients resided in Illinois, Iowa, Wisconsin, North Dakota, South Dakota and Minnesota. Illinois and Iowa had the largest number, twenty-eight (23.5 per cent). They also report ninety-six cases examined at the Mayo Clinic of which number forty-two (45 per cent) of the patients lived in the states named. Eleven cases were from each Iowa and South Dakota making twenty-two (22 per cent) of this series from these two states. Thus in a total of 215 cases thirty-nine and four-tenths per cent (39.4 per cent) were from the states indicated. Twenty (9 per cent) of these patients were from Iowa.

A large number of cases of actinomycosis will not be seen by an individual physician. Experience with this disease in clinical and diagnostic centers shows that in most cases the correct diagnosis has been primarily overlooked. This is often due to the protean characteristics exhibited by these lesions in different parts of the body, and in fact in the same region in different individuals, and in different stages of development of the lesions. It may also be due to lack of clinical experience with actinomycotic lesions, but is often due to failure to keep the disease with its often simple method of determination in mind in the differential diagnosis.

Many cases are difficult to diagnose definitely previous to suppuration or sinus formation. Even then if secondary infection is marked or the disease has been of long duration with contraction and induration of the tissues it may be impossible to come to a definite conclusion by the use of smears, cultural methods, or biopsy. The task is rendered less difficult, however, by the fact that

the condition if acute will likely soon soften with suppuration and abscess formation. If chronic it is a slowly spreading process and if untreated a persistently recurring one. At some time it will exhibit an area or areas of softening and abscess formation that will make diagnosis easy. Radiation hastens this process and is occasionally the means of definite determination of the condition.

Occurrence

Actinomycosis occurs commonly in cattle where it is well known as the lesion called "lumpy jaw" and is frequent among hogs. Its incidence among these animals is highest also in the middle western and northwestern states as shown in data presented by Sanford and Magath taken from the Federal Meat Inspection Report for 1920. Of the cattle killed in Chicago, Omaha and South St. Paul approximately 2 per cent in the first two cities and 4 per cent in South St. Paul were retained for actinomycosis, while in Los Angeles, California, but 0.3 of 1 per cent, in New Orleans, Louisiana, 0.9 per cent of 1 per cent and in New York, New York, 0.1 of 1 per cent were retained.

These facts taken with the showing that in human actinomycosis 80 per cent of the cases occur in males and 60 per cent of the patients are farmers support the evidence that there is either direct transference from animals to man or indirect inoculation by means of some material as grasses or grains that have been contaminated by animals. A large enough number of cases occur, however, in persons in whom it is difficult to prove or even imagine infection from these sources to cast doubt on this supposition. The issue is further clouded by the statement by Colebrook² that the fungus found on grasses and grains is aerobic and differs from the anaerobic organism *Actinomyces Bovis* the causative organism of actinomycosis in animals and man. He suggests that the organism is a common inhabitant of the alimentary tract. Furthermore, Lord has demonstrated the presence of this fungus in carious teeth and tonsillar crypts of patients with no clinical evidence of actinomycosis.

Reports of cases show that these lesions occur in almost every part of the human organism. Fourteen of ninety-six cases observed at the Mayo Clinic occurred in the appendix and sixty-one occurred in the head and neck region. New and Figi have reported three cases of involvement of the tongue and collected thirty-five cases from the literature. The central nervous system has been found involved, seven cases being found by Moersch at the Mayo Clinic in ninety-six cases studied.

*Read before the Tri-State District Medical Society, Milwaukee, Wisconsin, November 14, 1921.

Diagnosis

Definite clinical diagnosis of actinomycosis is difficult in many cases, especially if seen early or very late. The classical text-book picture of brawny induration with bluish discoloration and multiple sinuses will be seldom seen or be impossible to differentiate from old tuberculous lesions. Early cases are difficult to distinguish from tuberculous glands, Hodgkin's disease, sarcoma, lympho-sarcoma, or simple phlegmons secondary to oral infections following operative procedures.

Practically the diagnosis is made very simply by finding little yellow bodies in the purulent discharge from an incised abscess or open sinus, if one remembers to look for them. As is usual in diagnosis generally, there is where failure usually lies.

To illustrate this point mention may be made of a patient seen at the Mayo Clinic who had an appendectomy three or four years previously elsewhere, and several subsequent abdominal and two lumbar drainage operations. He presented open draining sinuses in the inguinal, abdominal, and lumbar regions. He was examined by a number of physicians, had x-ray examinations of the intestinal tract and surrounding osseous structures, besides serological investigations, blood counts, and urine examinations, without arrival at a definite diagnosis. On suggestion of the surgical consultant Dr. Sistrunk, search was made and the characteristic yellow bodies found in the pus from the discharging sinuses.

Old sinuses of the head and neck region with scanty discharge will seldom disclose these bodies but Jenson and Schery have demonstrated the actinomycetes in the scrapings from such sinuses. Newly formed areas of softening however small should be sought. Here simple incision will usually bring forth pus containing the yellow granules. These granules should always be watched for in an acute lesion that has softened where primary incision is made for drainage. The effort will be rewarded if it is actinomycosis.

If the lesion is acute with swelling, redness and systemic disturbance diagnosis should be reserved and treatment should be as for early phlegmon with hot moist applications. After localization and softening the granules will be found in the discharging pus following incision.

In slowly developing primary cases and in chronic lesions with induration and sinus formation the use of x-ray or radium will usually produce areas of softening. Incision and drainage of these areas and finding the yellow granules will establish the diagnosis.

The granules may be caught on the end of a

small instrument and placed on a slide. A few drops of water (tap water will do) are placed over and around it then it is rolled around in the water to wash away the pus. Now by moving it to another area of the slide it is isolated and may be crushed under a cover glass. Examination under the microscope will show a characteristic daisy formation. If the yellow granules are present in the purulent discharge they are unmistakable. If they are absent one is always in doubt and will pick out particles of inspissated pus or other debris, only to find that they disintegrate in the water on the slide or show only pus and epithelial cells under the microscope.

Pathologic examination of tissue prepared from a newly formed nodule excised near the margin of an advancing lesion may show the characteristic granules. New and Figi proved the diagnosis in this way in small primary nodules excised from the tongue. The mycelia are gram-positive and acid fast.

Attempts have been made by Colebrook to establish the diagnosis of actinomycosis through the agglutination properties of the patient's blood serum, and Sanford and Magath are undertaking work to determine whether cultures of *Actinomyces Bovis* may be used as antigens to demonstrate complement fixing bodies in infected individuals, but both procedures are in the experimental stage.

Treatment

In the treatment of actinomycosis numerous drugs have been advocated, for example; copper salts internally and externally by Bevan and Ramstead and methylene blue internally and by injection into the tissues and sinuses with drainage of the abscesses and x-ray treatments by Jensen and Schery. Injection of autogenous and polyvalent stock vaccines was used recently by Colebrook, being accompanied by surgical drainage of the abscesses. Colebrook concluded that the surgical drainage in his treatment was a big factor in the recovery of his patients and Jensen and Schery were convinced that surgical drainage and x-ray treatments had more effect in clearing up their patient's lesion than the medication with methylene blue.

Heyerdahl has reported several cases treated successfully with radium. In all of them abscesses formed and were either incised or ruptured spontaneously. A physician reported to me a cure without recurrence by simple incision of the abscess and daily swabbing of the cavity with turpentine.

Stokes in a personal communication states that he has used arsphenamin with surprisingly good

results in two patients with abdominal lesions. In other systemic febrile cases he feels that little good, if not actual harm was done. He is of the opinion that if the patient is afebrile and his resistance is high there is possibility of benefit from arsphenamin in systemic cases, but does not consider it a substitute for intensive radio-therapy and administration of iodides.

Incision of the abscess, swabbing the cavity with iodine and packing with iodoform gauze, followed by the application of radium, as practiced by New gives good results. This treatment is accompanied by the oral administration of a saturated solution of potassium iodide, beginning with thirty grains daily and carrying it up in increasing doses to 200 grains daily. It is then carried along to the patient's tolerance with periods of rest for a week or two. The drug is stopped if intolerance is shown by skin rashes or gastrointestinal disturbances. Stokes has given this drug in 500 to 1000 grain doses daily in refractory neurosyphilis but believes such large dosage is more detrimental than helpful in actinomycosis.

After opening the abscess the finger should be introduced into the cavity to break down accessory pockets. The iodoform pack should be removed after two or three days and be replaced daily following generous swabbing of the cavity with iodine. Formation of granulation tissue and tissue contraction will gradually obliterate the cavity while the pack will insure thorough drainage and will keep the wound open externally. Radium may be used immediately, or if there is marked inflammatory reaction, after a week or ten days. Its application may be repeated after six weeks to three months if necessary.

One should remember and the patient should be told in a chronic case that the condition is prone to spread and recur for a time, that subsequent abscesses are likely to form, necessitating incision, and that treatment will likely be prolonged. An acute case with a definitely localized abscess will usually heal primarily without recurrence after this treatment.

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MEETING STATE SOCIETY OF IOWA MEDICAL WOMEN

All women physicians of Iowa are invited to attend the meeting of the State Society of Iowa Medical Women at Ottumwa May 8. Hotel Ottumwa will be the headquarters and place of meeting. The program promises to be an unusually good one, and will appear in the April issue of this Journal.

Members and others who expect to remain for the general session of the Iowa State Medical Society are urged to make their reservation early to secure satisfactory accommodation.

Any woman desiring to join the State Society of Iowa Medical Women and who is eligible for membership may send her name to the secretary, Dr. Julia F. Hill, Des Moines, who will refer the name to the membership committee.

TRI-STATE DISTRICT MEDICAL SOCIETY EASTERN CLINIC

The Tri-State District Medical Association comprising states of Iowa, Illinois, Wisconsin and Minnesota, and districts of surrounding states intends to run a clinic train East the last two weeks in April.

It is the wish of the organization to give the physicians of the Middle West an opportunity to attend the clinics, which are to be conducted by the members of the teaching staffs of the following universities: Harvard, Yale, Johns Hopkins, Columbia, Bellevue, Cornell, University of Pennsylvania, Jefferson, Western Reserve, and the Walter Reed Hospital.

The clinics are being arranged in advance so there will be no loss of time, and will cover the different branches of medicine and surgery.

The cost of the trip will be \$169.46 for upper, and \$173.89 for lower berth, this includes railroad fare, Pullman service, nine nights in first-class hotels in the clinic cities and clinic arrangements. The clinics of the universities are arranging to give the physicians a fine treat in the way of instruction, and a large number of physicians have already made reservations.

The association is a democratic post-graduate organization, and any physician in Iowa who is in good standing in the State Society will be taken care of if possible, on the trip, on conditions that he communicates with the secretary of the organization at once in regard to reservation. It will be impossible for us to hold open the reservations for any length of time.

W. B. Peck, Freeport, Illinois,
Managing Director.

D. G. Smith, Freeport, Illinois,
Secretary-Treasurer.

The Journal of the Iowa State Medical Society

D. S. FAIRCHILD, Editor.....Clinton, Iowa

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HEALTH CONDITIONS IN THE CANAL ZONE

For some years the Canal Zone has been looked upon as the trial ground of a great sanitary experiment. Every condition was present. The French had undertaken to construct a canal and one of the causes of failure had been recognized as the sickness and death rate from causes not understood at that time. At last, when the United States had taken over the canal, we bid fair to repeat the experiences of the French with less excuse, because our sanitary officers had worked out the cause and transmission of the diseases which had made the French undertaking impossible. When failure stared us in the face President Roosevelt placed the command of the sanitary and health conditions in the hands of one who was closely connected with working out yellow fever and malaria problems in Havana General Gorgas. Then commenced the trial of medical science, in the field of undertaking where the conditions were such as to show conclusively what could be accomplished. The conditions of the warfare against disease are well known; the isolation of the yellow fever or malaria patient and the destruction of the carrying mosquito. The primary condition—the destruction of the mosquito—was not an easy matter. The conditions for the multiplication of this particular mosquito were most favorable, the luxuriant growth of vegetation, the heavy rainfall, the minute size of the enemy and the large area covered. The destruction could not be accomplished automatic-

ally or by wholesale but by individual attention. It could be done if a sufficient number of intelligent, trained men were employed. The Canal project was thought to be of sufficient importance to meet these conditions. The Canal was constructed and put into operation. Two things had been accomplished, the passing from the Atlantic to the Pacific Oceans and the conversion of a breeding place of disease into a health resort. The one by the highest order of engineering skill and the other by the exercise of the highest order and direction of sanitary skill; the final product of advanced Medical Science. The completed Canal had been presented to us and with it an area of land ten miles wide and forty-seven miles long in which the mortality and morbidity rates were lower than in any other area under the jurisdiction of the United States. The reputation has become world-wide and has become a source of pride to the world of Medical Science.

Now how well are we maintaining the conditions bequeathed to us by the sacrifice of devoted men. After the Great War a great burden of taxation came upon us which must be borne by the public, and politicians in Congress began looking for places where economy could be exercised and not be clearly seen by the public, and not seriously affect placemen. The public knew in a general way what had been accomplished in Panama, but not of the conditions which it was necessary to maintain. Now comes the order that the guardians of health and safety be reduced one-half and the result is the rapid increase of a violent type of malaria. At this writing there are among government employes, fifty-one cases, where only a few weeks ago there were no cases, notwithstanding the watchfulness night and day of the greatly reduced mosquito force. The people of the Zone are rightfully alarmed. This dangerous condition is the clear product of a mistaken economy and in this far-away place the people are helpless, for under the ethics of government employment, criticism is not permitted. The remedy is at hand. It is not a case of "swat the fly," that everyone should engage in. Special training in the habits of the mosquito is necessary. The work must be done in the night by the use of flashlights. This is a very cunning mosquito and will certainly escape all but the trained searcher. In the army it is necessary to keep horses, and if by chance a horse should wander over soft ground, and his feet should sink into the ground two or three inches, the hole will fill with water and thus afford a breeding place for mosquitoes. If this should be in grass land the mosquito would be better protected and escape

all but the closest observation. The anopheles has a particular liking to vacant buildings and is often found on a house hunting expedition. To make the experiment complete and to provide all the conditions, the government has relaxed its efforts and the zone is now returning to its former condition of health, to the degree marked by reduction of its sanitary force. It is reported that a majority report of an economy commission complained that the health in the zone was better than in the United States and that vigilance should be reduced until the sickness and death rate should equal at least that of the largest cities in the United States, a curious philosophy to be presented by high army and navy officers.

DECLINE IN TUBERCULOSIS

The decline in tuberculosis has led to a discussion as to the factors responsible for this decline, or as the Literary Digest put it, "Who Killed Cock Robin?" For several years an active propaganda has been carried on and we have had many assurances that the rather rapid decline in tuberculous disease is due to the campaigns of education, and men having more or less knowledge of tuberculosis have been sent out at a considerable expense to the state and welfare associations to talk to the people about tuberculosis. Thinking men and well informed men began to entertain doubts as to the claims made. It was easily discovered that the incidence of tuberculosis was rapidly declining before the antituberculosis crusade started, and many authorities on this disease doubt if the antituberculosis propaganda had any real influence in lessening the frequency of the disease.

In a book recently written in part by Professor Claxton Gittings of the University of Pennsylvania it is stated that the figures from the Registrar General's report it is shown that in England since 1865 the decline in tuberculosis has been almost constant. "From that date until the present, the actual decline has amounted to 20 per cent and the relative decline in proportion to the increase in population has amounted approximately to 50 per cent. As this diminution in the death rate began almost twenty years before the discovery of the tubercle bacillus and almost forty years before the growth of the sanatorium movement, it is clear that it is owing to causes other than the anti-tuberculosis crusade of the last two decades." Dr. Karl Pearson points out the decline in England was much less rapid in the period from 1895 to 1910 than in the period from 1847 to 1895.

Dr. Emerson has gone into this subject in a recent number of the A. M. A. Journal to substantially the same effect. We must therefore, look for other causes than anti-tuberculosis crusades for the decline in tuberculosis. Probably the most potent cause for this decline is the better housing and better living among the working classes in industries. This has been made possible by the increased wages. We must also take into account the better sanitary and hygienic conditions under which we live, in their effect on the general health. Even these conditions are not enough to explain the decline in tuberculosis. There are questions of acquired or inherited immunity, virulence of the bacillus and other questions for scientific study.

Even if some of our pet notions in regard to the decline of tuberculosis have received a severe shock on investigation, we should not discontinue reasonable efforts to lessen tuberculosis because it is not quite clear that they are useful in accomplishing the elimination of tuberculosis, but at the same time avoid the useless expenditure of large sums of money on a mere theory unsupported by evidence. It is as clearly the function of the state to provide institutions for the treatment of tuberculosis as for the state to provide for the treatment of epileptics or the insane. Tuberculosis, epilepsy and insanity are diseases, and the duty of the state is as clear in one instance as the other.

As we see it one of the obligations of organized medicine is to provide for the welfare of the profession by extending its usefulness as doctors of medicine and promote the highest sense of public duty as physicians and citizens.

GIFT OF \$2,250,000 TO STATE OF IOWA

To Enable the State to Complete Hospital at Saving of 50 Cents on Dollar

President W. A. Jessup of the University of Iowa has announced that the college of medicine has been proffered the largest gift ever made to a tax-supported institution in the United States, namely, \$2,250,000 to assist in completing the building and equipping of the new hospital and teaching laboratories. These will be erected on the beautiful site purchased at the time the Children's and the Psychopathic Hospital units were built. The site is on the west bluff of the Iowa river facing old capitol.

Dr. Abraham Flexner of the general education board and Dr. George E. Vincent of the Rockefeller Foundation, after acquainting themselves with the needs of the situation by personal visits to Iowa City, informed President Jessup that they would recommend to their boards favorable action on the

request of the state board of education to assist in completing the plant. The estimated cost of the completed job is \$4,500,000; and agreeable to these recommendations the two foundations joined in proffering a gift of \$2,250,000, providing the state of Iowa shall, over a period of five years, agree to complete the plant. This will require an appropriation of \$450,000 a year for the next five years.

Sum Instantly Available

The moment the general assembly accepts the plan the University can begin the work, as the foundation's gift will be instantly available.

Up to this time the board of education had been at a loss to know how to meet the hospital needs and at the same time meet the ever increasing demands of instruction in the University and the other educational institutions. This gift would seem to solve their problem, for the medical service can go forward at once with only a modest annual appropriation.

Another great advantage is that the completion of this new plant will release, for other purposes of the University, all the places now used as hospitals, nurses' homes, etc. These might well be utilized as dormitories for women.

Board of Education's Request

Following is the formal request made by the Iowa State Board of Education through Secretary W. H. Gemmill to the General Foundation Board and the Rockefeller Foundation of New York City, for assistance for medical education in Iowa.

"Your devotion to the interests of medical education prompts us to present the needs of Iowa to your consideration.

"For more than a decade, Iowa has pushed forward vigorously her program of medical education, during which time she has drawn heavily upon the resources of the state for teaching and hospital service under the provisions of the Perkins and Haskell-Klaus laws.

"Our very success has well-nigh worked our undoing, as our facilities in the laboratory and clinical departments have become hopelessly inadequate to meet the demands of the public. It must be remembered that the college of medicine is but a single unit of the University. With the increase in attendance following the war, the state has been compelled to increase the appropriations to care for additional instruction. It is now necessary to ask the legislature for large sums of money to provide teaching and laboratory facilities for the University as a whole.

"Inasmuch as the state also maintains, at a high point of efficiency, a growing college of agriculture and mechanic arts, as well as a college for the training of teachers, it may be seen that it is well nigh impossible for the state to meet all of these requirements, and at the same time push the medical program as vigorously as needed.

"Unless some means may be found to take care of the medical situation in rapid and aggressive fashion without neglect of other departments, the whole gain which we have made in medical education is likely to be lost, as the state carries forward its program of caring for the wide range of needs in the field of higher education. It is our understanding that your board has given money to educational institutions on a contingent basis. We are hoping that the two Foundations (the Rockefeller Foundation and the general education board) might each contribute one and one-eighth million dollars, making a total of two and one-quarter millions to be expended on the medical plant, on condition that the state of Iowa make a similar appropriation, to be available within a period of five years.

"This would enable us to go forward within a period of five years so as to assure efficient medical education and hospital service to the commonwealth. With the funds now being appropriated for the operation of the hospital and the college of medicine it would be possible to maintain a really worthy hospital and medical organization."

Dr. Flexner's Reply

To the above request the general education board, by its secretary, Dr. Abraham Flexner, made the following reply to Secretary Gemmill on November 24.

"At a meeting of the general education board held November 23, 1922, the officers presented your letter of November 9, 1922, and reported further interviews with President Jessup and Mr. Boyd, suggesting that the general education board appropriate one-fourth toward the total sum needed for the construction and equipment of the proposed medical school plant. I have pleasure in reporting to you that the board authorized the 'executive officers in their discretion to commit the board to an appropriation to the college of medicine of the University of Iowa of a sum not to exceed one million one hundred twenty-five thousand dollars (\$1,125,000) toward a total of not less than four million five hundred thousand dollars (\$4,500,000) for the purpose of building and equipping the proposed medical school plant, it being understood that, if the total cost is less than four million five hundred thousand dollars (\$4,500,000) the appropriation of the general education board will be reduced pro rata.'"

Dr. Vincent's Reply

On December 7, 1922, President George E. Vincent sent the following confirmatory telegram to President Jessup:

"It gives me pleasure to report to you that yesterday in response to the request of the Iowa state board of education the trustees of the Rockefeller Foundation voted to contribute one quarter of the cost of the proposed building program of the medical school of the University of Iowa with the understanding that the Foundation's share should not

exceed one million one hundred and twenty-five thousand dollars. We hope that you will be successful in carrying out your plans, for we are convinced that the medical school if it can be properly housed and equipped will render an increasingly important service not only to the state of Iowa but to the progress of medical science and teaching in the central west and the country at large."

In view of the splendid and unprecedented gift of \$2,250,000 which has been promised to the state of Iowa for the use and benefit of the college of medicine at the State University, by the General Education Board and the Rockefeller Foundation, it may be of interest to the state to know something of these foundations,—what they are, why they came to be, and how they are administered.

Until a comparatively few years ago, men desiring to establish agencies for the benefit of their fellow men or to contribute to those already in existence made the gifts outright as individuals, either while they lived or through provisions in their wills. Quite often in doing this they failed to properly gauge the future, and imposed restrictions which were thought at the time to be wise but which afterward proved to be very embarrassing.

Some years ago, profiting perhaps by the experiences above referred to, men of wealth began to adopt a different method and to found institutions properly chartered, usually by the general government by act of congress, to which bodies they turned over portions of their wealth to be administered by trustees duly appointed as they, the trustees, deemed best. The restrictions imposed, if any, were of such a general character as to be negligible. Among the foundations thus established might be mentioned the General Education Board, the Rockefeller Foundation, the Laura Spellman Foundation, the Rockefeller Institute of Medical Research, the International Health Board, the Russell Sage Foundation, the Carnegie Institute, the Carnegie Foundation for the Advancement of Teaching, the Carnegie Peace Foundation, the Carnegie Hero Fund, and the Carnegie Corporation.

Iowa Colleges Aided

Of the foundations which made this great gift to Iowa, the general education board was the first founded. Its primary object was to assist higher education everywhere, and especially in the United States and Canada. Up to date it has appropriated many millions of dollars. Much of this money has gone to colleges such as Iowans everywhere are familiar with—institutions like Grinnell, Coe, Cornell and the like. Latterly this foundation has had special funds given to it for the advancement of medical education. Large sums have been given to Johns Hopkins, Harvard, Yale, University of Rochester, Vanderbilt University, Tulane University and other institutions in the south. In connection with the Rockefeller Foundation, it has established medical schools in various parts of China, and is now reha-

bilitating the medical schools of Belgium and assisting institutions in other European countries that have been devastated by the war. Prior to this it has made gifts to but two state institutions, namely the University of Colorado and the University of Oregon. The scope of the Rockefeller Foundation is exceedingly broad. Latterly it has been devoting much of its energy to the improvement of medical education and the advancement of public health agencies. A summary of what it did in the year 1921 will show at a glance how far-reaching are its activities:

(1) Continued a quarter-million annual appropriation to the School of Hygiene and Public Health of Johns Hopkins University; (2) pledged two million to Harvard for a school of health; (3) contributed to public health training in Czechoslovakia, Brazil, and the United States; (4) aided the Pasteur Institute of Paris to recruit and train personnel; (5) promoted the cause of nurses training in America and Europe; (6) underwrote an experimental pay clinic in the Cornell Medical School; (7) formally opened a complete modern medical school and hospital in Peking; (8) assisted twenty-five other medical centers in China; (9) promised a million dollars for the medical school of Columbia University; (10) contracted to appropriate three and one-half millions for the rebuilding and reorganization of the medical school and hospital of the Free University of Brussels; (11) made surveys of medical schools in Japan, China, the Philippines, Indo-China, Straits Settlements, Siam, India, Syria, and Turkey; (12) supplied American and British medical journals to 112 medical libraries on the Continent; (13) supplemented the laboratory equipment and supplies of five medical schools in Central Europe; (14) defrayed the expenses of commissions from Great Britain, Belgium, Serbia, and Brazil; (15) provided 157 fellowships in hygiene, medicine, physics and chemistry, to representatives of eighteen countries; (16) continued a campaign against yellow fever in Mexico, Central and South America; (17) prosecuted demonstrations in the control of malaria in ten states; (18) cooperated in hookworm work in nineteen governmental areas; (19) participated in rural health demonstrations in seventy-seven American counties and in Brazil; (20) neared the goal of transferring to French agencies an anti-tuberculosis organization in France; (21) provided experts in medical education and public health for counsel and surveys in many parts of the world, and rendered sundry minor services to governments and voluntary societies. These were done in part by the Foundation directly, but chiefly through its departmental agencies—the International Health Board, the China Medical Board, and the Division of Medical Education.

During the years 1920 and 1921, the General Education Board was chiefly concerned in the distribution of a gift of fifty million dollars to aid in the increase of teachers' salaries. Up to July last, they

had appropriated for this purpose \$26,732,000. Since its establishment it has, out of its general funds, aided 207 institutions, appropriating \$48,665,639.06. Of this total, thirty-two were in the Middle Atlantic States, to which this institution gave \$8,517,812.59.

Distinguished Men in Charge

As to the men who administer these funds, it would be difficult to find any body of men anywhere who would command more universal respect. The members of the boards which made this gift are as follows: Frederick T. Gates, John D. Rockefeller, Jr., Albert Shaw, Wallace Buttrick, Edwin A. Alderman, Harry Pratt Judson, Wickliffe Rose, Jerome D. Greene, Anson Phelps Stokes, Abraham Flexner, George E. Vincent, James H. Dillard, Charles P. Howland, Trevor Arnett, John W. Davis, John H. Agar, Simon Flexner, Vernon Kellogg, Julius Rosenwald, Martin A. Ryerson and Frederick Strauss.

The majority of these men are educators and specialists,—some of them among the most eminent in the world. George E. Vincent, president of the Rockefeller Foundation, was formerly president of the University of Minnesota. Wallace Buttrick, president of the General Education Board, is an eminent Baptist clergyman, and was for many years pastor of one of the leading Baptist churches in Minneapolis. Harry Pratt Judson is president of the University of Chicago. Edwin A. Alderman is president of the University of Virginia. Albert Shaw is editor of the "Review of Reviews." Abraham Flexner is an educational expert of international fame. Simon Flexner is a scientist of international reputation. John W. Davis was formerly a representative from West Virginia, and occupied a prominent position in the diplomatic service, being minister to England during the world war. Charles E. Hughes was a trustee until he became secretary of state, when he resigned. The others are likewise eminent in educational and business circles. Their very names are a guarantee of righteousness. They control the funds entrusted to them without dictation from anybody, and when they make a gift as they have made this one, they attach no strings to it.

As long as men of this kind control these foundations—and as they choose their own successors, it is likely that they always will be controlled by men of like character—these funds may be relied upon to work for the "healing of the nations and the blessing of the world."

Medical School Ranks High

This gift came to Iowa solely on merit. It was given because Iowa had established at the State University a medical school of the highest character, manned by men of the highest attainments and actuated by the highest ideals. It was not made until the men in charge of these foundations had satisfied themselves of these facts.

In a letter to an Iowa official, the secretary of one of these boards said in substance: "After all, the question with us is faith in men, faith in the officers

of the institution and those associated with them, faith in the management of the college of medicine, faith in the board."

By the acceptance of this gift, Iowa can meet immediately the needs of the hospital and medical situation without neglecting the demands of the instructional departments in the other fields of higher education.

FEDERAL DEPARTMENT OF HEALTH EDUCATION AND WELFARE

In Washington during the war, the best business executives of the country brought the defects of the national administrative system to a public knowledge that had never before existed. Since that time, trained minds have been concentrating on such a reorganization of the federal departments as would enable them to function both more effectually and, what is quite as important, more economically, so that taxes may be reduced. Suggestions along these lines effect practically every department of the government, but we will only consider those which would make changes in federal administration as it effects the public health and allied problems.

In order to do what should be done by government, it is really a pity that we have to consider what has already been done. Most of the federal efforts along public health and educational lines have been haphazard—the result of some movement or craze, and such things must result in lopsided efforts, putting undue emphasis on first this and then that subordinate movement, instead of calmly surveying the entire field, visualizing its needs, and then fitting the machinery of government to their solution.

At the conference recently held in Washington, the postmaster general, Dr. Hubert Work, recently president of the American Medical Association, and himself one of the most distinguished and successful practitioners of medicine of the country, made a brief statement that was full of real force. He said it must be recognized that most of the problems affecting both public health and education were matters which could only be solved under the police powers reserved to the states; that the federal functions were relatively small, and that it would not require a large and complicated department to head up these interests in the federal government so that the whole national education and health movement could be coordinated. From Washington there would be control of maritime quarantine to prevent the introduction into the United States of epidemic diseases from without. The other great problem under federal control is interstate quarantine to prevent the spread of disease from state to state along the lines of travel, which are now so important. Besides these, the federal government should, in its laboratories, conduct and encourage investigation in all those things which effect public and private health, especially in the larger problems that are now the causes of ill health in large sections of the country,

or amongst considerable proportions of the population. They should have a few expert mobile units that may be called into consultation by affected states. Through conferences of state and local officials having a common problem they could help to focus attention with a view to its solution. Upon the invitation of states they could conduct demonstrations of methods for the prevention of disease, especially emphasizing that it was not the function of the federal government to interfere with the treatment of diseases which already exist, that it had nothing to do with the regulation of the practice of the healing art in any of its branches, and never should have.

General Sawyer, the personal representative of the president, stated that it was the present purpose of the committee on reorganization of the federal departments, to recommend to the congress the establishment of a department of education, health and welfare, with a secretary in the cabinet, and an assistant secretary which would consist of four bureaus—education, health, welfare, and the Veterans' Bureau. The problems presented by these four bureaus are naturally inseparable, and the heads of such departments would be a national board of strategy which would help do the things the country needs. It is proposed to transfer to the new department all the existing activities of the federal government along these several lines just as they are, taking over their personnel and functions, headed up by their technical staffs and chiefs, merely taking them from their present environments, which are frequently and entirely inimicable to their successful operation, and putting them where they can work sympathetically together. It is interesting that this same thing has been done by all the great governments in the world, and it is felt that the United States has lagged along behind the other states in recognizing the importance of its greatest asset—its human beings.

It is inconceivable that there can be any great objection to this program except upon the part of those who are the enemies of progress in government. It is not the purpose of the new department to enlarge the federal functions, nor to interfere with the full and free exercise of the police powers of the states in these respects. It is not the desire to build up a great federal organization, but rather to simplify and concentrate federal bureaus with a view to getting rid of the chaos and duplication that now exist in Washington. The proposed reorganization would decrease the expenses and increase the efficiency of every bureau involved.

It is especially recognized that the United States Public Health Service should be transferred to the new department as it exists, carrying with it its honorable traditions.

At the invitation of General Sawyer, representatives of the medical and health professions from all sections of the country gathered together in Washington in January and it was interesting to see how unanimously and how gratefully they all received

this great practical plan for progress in the efficiency of our federal government. It was realized by all those present that the records of the draft had shown that a great percentage of our young manhood and womanhood were growing up into adult life untaught as to the most important problems that would confront them as citizens, unprotected from the most serious defects that could impair their usefulness, and it was the unanimous desire of those present, as we all felt it would be practically the unanimous desire of the whole citizenship of the country, that this movement be carried through to successful conclusion.

To this end, we invite our readers to bring these matters to the attention of the various state medical organizations of which they are members, and especially to the public press, which in this country so largely molds public opinion, with a view to bringing the attention of the members of the Senate and House of Representatives of the United States the feeling on the part of the public that this great and entirely non-partisan movement which has the approval of the present administration, as it has had of the last three, should be put upon the statute books at the earliest possible moment.

Arthur T. McCormick.

IOWA STATE UNIVERSITY NEWS NOTES

Don Griswold, M.D.

The Johnson County Medical Society held its last meeting of the year at the Psychopathic Hospital, Iowa City, in December, 1922. Dr. Samuel T. Orton, director of the Psychopathic Hospital, gave a demonstration in neuropathology preceding the business session. Dr. Lawson G. Lowrey, retiring president, conducted the meeting and presented a number of cases to illustrate the type of patients received at the hospital for treatment. The following officers were elected for the ensuing year: President, Dr. F. J. Rohner; vice-president, Dr. J. C. Kessler; secretary-treasurer, Dr. A. W. Bennett; delegate to the Iowa State Medical Society Convention, Henry J. Prentiss.

The Child Welfare Research Station of the State University of Iowa, are to receive a gift of \$22,500 from the Rockefeller Foundation. The amount will be received in amounts of \$7,500 for three years. Dr. Birdt T. Baldwin is the head of this Child Welfare Station.

The women of the College of Liberal Arts, acting as hostesses gave a party to the nurses of the University Hospital, just before Christmas. The entertainment planned by the Y. W. C. A. and the Woman's Association, included a Xmas tree, program and games.

Dr. Bundy Allen, Chief of the X-ray Department of the College of Medicine, State University of Iowa,

was elected by the Kaaba Temple at Davenport, as one of the four delegates to represent this temple at the International meeting of the Imperial Council of the Ancient Arabic Order of Nobles of the Mystic Shrine. This meeting will be held in Washington, D. C. in June, 1923.

The Tuberculosis Sanatorium at Oakdale has been equipped with a radio receiving apparatus. Now the patients and attending physicians, can enjoy Sunday services, musical entertainments and other programs.

The student nurses of the Nurses' Training School of the State University of Iowa, held a dancing party at West Lawn the first of December. Dr. and Mrs. Edwin C. Yoder and Dr. Henry W. Scott, were the chaperones.

An Institute for Superintendents for Hospitals and Instructors of Nurses, over the state, was held at the Iowa State University Hospital, December 8 and 9, 1922, under the direction of Miss Josephine Creelman, superintendent of the nurses' training school. The meeting was well attended and all enjoyed the demonstrations, discussions, question box, sight seeing, etc., that were on the program. The following members of the staff of the University Hospital, participated in the program: Miss Josephine Creelman, Miss Sophia Potgieter, Dr. A. J. Lomas, superintendent of the University Hospital, Miss Lola Lindsey, Miss Faith Funk, Miss Beulah Crawford, Miss Jane McLaughlin, and Miss Hilda Sexauer.

A sale of reed and raffia baskets and trays, made by the crippled children at the Perkins Hospital, Iowa City, was held just prior to the holiday season. The proceeds from this sale were turned over to buy Christmas gifts and extra Christmas cheer for these crippled children.

The disabled veterans in the Hospital at Oakdale, as well as in the other hospitals over the state, were well remembered on Christmas day by the American Legion and the auxiliary of Iowa City.

Committees from the Iowa City Elks Lodge, besides giving the children of Iowa City a good time Christmas day, visited the various hospitals in Iowa City and Oakdale, where they left good cheer and flowers.

Dr. Bundy Allen attended a meeting of the American Roentgenologists held in Detroit, Michigan, in December.

Some of the University students employ very unique methods in working their way through school. Frank Hsu, a freshman student from Hunan, China, spends his spare time in feeding and caring for a large number of white mice, used in the research

departments of the State University, for experimental purposes.

The State University received a shipment of twenty-one thoroughbred dogs from the Carnegie Institute of Washington. These dogs with the records of their heredity through many generations will be of special value for investigation in medicine, heredity, and psychology. They will make their home on the West Side Hospital grounds.

Dr. William Vernon Cone of Iowa City, who graduated from the College of Medicine two years ago, has been awarded a fellowship by the National Research Council. The Research will be carried on at the Psychopathic Hospital under the direction of Dr. Samuel T. Orton. The work will be research in neuropathology, and will be an extension of the work already begun in this hospital.

Affiliation between Coe College and the Training School for Nurses at the University Hospital, has just been announced. For some time a course of five years leading to a combined degree in liberal arts and nursing, has been available for university students. Later arrangements were made for liberal arts work to be done at Drake, a Des Moines College, and the nursing course in Iowa City. It is this arrangement that has been completed with Coe College.

The state epidemiologist wishes to call attention to the small-pox menace now prevalent in adjoining states. Since January 1, 1922, Denver had had 660 cases of small-pox reported, which resulted in 226 deaths. With the many through trains easy access from some of these foci of infections to this state local health officers and physicians generally should be on the lookout for small-pox of this virulent type. There were nine deaths from this cause in this state last year.

The board of directors and the staff of the Washington County Hospital, at a recent meeting voted to establish a laboratory as a part of the hospital service.

HOTEL RESERVATION, OTTUMWA MEETING

Make your hotel reservations early for the Ottumwa meeting. Write Dr. F. L. Nelson, chairman, Local Hotel Committee, Ottumwa, Iowa.

You will need your 1923 membership card for registration at Ottumwa. Have you paid your 1923 dues to your local secretary?

SOCIETY PROCEEDINGS

Buchanan County Medical Society

A meeting of the Buchanan County Medical Association was held in Independence December 8 with Drs. McGready, Sells, A. G. Shellito, C. W. Tidball, F. F. Agnew and J. W. Barrett of Independence, Dr. Johnson of Quasqueton and Dr. Householder of Winthrop present. The meeting was addressed by Dr. Sampson of Creston on Field Activities of the State Medical Association. At the business session the following resolution was adopted: "Resolved, That the Buchanan County Medical Association is heartily in favor of the work done by the local chapter of the State Tuberculosis Association and the sale of seals for the benefit of said association." Officers were then chosen for the coming year as follows: President, F. F. Agnew; vice-president, Dr. N. W. Johnson, secretary, afternoon meeting was followed by a banquet at M. W. A. hall.

Calhoun County Medical Society

Thursday evening, December 21, at the Brower Hotel, occurred a meeting of the Calhoun County Medical Association. There were about twelve of the doctors of the county in attendance and Dr. Lena K. Beach, retiring superintendent of the reformatory, was the guest of honor. Papers were read by Dr. Beach and Dr. Kauffman the retiring secretary and president respectively. Election of officers took place, and the officers chosen were: Dr. L. E. Eslick, president; Dr. Warren McCrary, vice-president; Dr. D. J. Townsend, delegate to the state convention; Dr. P. W. Van Metre, secretary. Dr. T. B. Herrick of Manson, is the retiring vice-president. The association presented Dr. Beach with a handsome silver vase as a token of their esteem.

Cerro Gordo County Medical Society

The regular meeting of the Cerro Gordo County Medical Society was held at St. Joseph Mercy Hospital, Mason City, Tuesday evening, February 20. Following the business session, Dr. Raymond Weston, contributed a paper on Fractures of the Spine with presentation of three unusual cases. Dr. R. E. Brisbine read a paper on Hydatid Mole and Chorion-epithelioma with case report. A social session closed the program.

W. L. D.

Des Moines County Medical Society

All officers of the Des Moines County Medical Society were re-elected at the annual meeting held at the Hotel Burlington December 12. A scientific program was given by three out-of-town speakers with a musical entertainment and banquet in the evening.

Dr. James S. Cooper was re-elected president; Dr. George J. Pearson, vice-president, and Dr. George H. Steinle, secretary and treasurer.

Following the election of officers, Dr. Charles W. Burhans of Cleveland, Ohio, read a paper. The meeting was then adjourned until 6:30.

Scientific papers were read by Dr. William H. Vogt and John L. Tierney of St. Louis, Missouri.

Dubuque County Medical Society

Dubuque County Medical Association met in annual session at Leiser's gardens December 12, elected officers for the ensuing year as follows: President, Dr. Lillian Kinnier; first vice-president, Dr. Walter Carey; second vice-president, Dr. F. S. Leonard, Cascade; secretary, Dr. H. E. Thompson; treasurer, Dr. J. H. Schrup; delegate, Dr. McNamara; alternate, Dr. H. B. Gratiot. Board of censors, Dr. A. M. Loes, Dr. L. Linehan and Dr. M. H. Scheele; librarian, Dr. R. R. Harris.

Dr. Mary Kileen, retiring president, gave an address covering the many points explaining the success of the Dubuque County Medical Association. Dr. Lillian Kinnier also made a talk on the work and purpose of the organization.

Harrison County Medical Society

The Harrison County Medical Society convened at Persia, Wednesday, December 13. Dr. Cook, president and Dr. Heise, secretary. Dr. Hansen of Logan and Dr. Flothow of Omaha participated on the program. Dr. Nelson of Persia gave an interesting talk on hydrotherapy and massage demonstrating the latter. Dr. Nelson taught massage in Lincoln and Council Bluffs.

Henry County Medical Society

The Henry County Medical Association met December 14 at the County Hospital, Mt. Pleasant, for the annual election of officers. The result was as follows: President, Dr. George E. Smith; vice-president, Dr. John W. Laird; secretary-treasurer, Dr. E. A. Stewart.

Johnson County Medical Society

Officers have been elected by the Johnson County Medical Society for the ensuing year, as follows: President, Dr. F. J. Rohner; vice-president, Dr. J. C. Kessler; secretary-treasurer, Dr. A. W. Bennett; delegate to the Iowa State Medical Society convention, Dr. Henry J. Prentiss. At the current week's session of the local society the psychopathic hospital staff members were the hosts.

Dr. Lawson G. Lowery, the retiring president, gave a resume of the work of the hospital, presenting a number of cases of various types, to illustrate the cases received at the Psychopathic Hospital for treatment.

A laboratory demonstration in neuropathology, presented by Dr. Samuel T. Orton, director of the psychopathic hospital, preceded the business session, and refreshments followed the election.

Mills County Medical Society

The Mills County Medical Society met at the Iowa Institute for the Feeble-minded at Glenwood December 7.

Dr. Edgar Christy of Hastings was re-elected president and Dr. M. S. Campbell of Malvern, secretary.

The matter of a county hospital was taken up and a committee appointed to report at the meeting to be held in February in Malvern.

Page County Medical Society

The Page County Medical Society met in its regular annual session on December 14, 1922, at the Clarinda State Hospital. At this time the following officers were elected: President, J. F. Benning of Yorktown; vice-president, J. O. Weaver of Shenandoah; secretary-treasurer, J. F. Aldrich, Shenandoah; delegate, W. C. Philips of Clarinda, and alternate delegate, J. O. Weaver of Shenandoah. Drs. J. F. Van Meter of the State Hospital, J. F. Aldrich of Shenandoah and W. C. Philips of Clarinda were elected censors for one, two and three years respectively.

The program consisted of a motion picture film of 5000 feet, portraying the Wertheim Obstetrical Clinics of Vienna which was very instructive and entertaining to members and visiting doctors and nurses. Routine matters of business were transacted and communications were read from our field secretary as well as recording secretary.

J. F. A., Sec'y.

Plymouth County Medical Society

Plymouth County Medical Society met December 12 at the offices of the Le Mars Clinic. Officers for the year were elected as follows: W. J. Brunner of Akron, president; A. H. Jastram, Remsen, vice-president; M. J. Joynt, Le Mars, delegate. Matters of interest to the profession were discussed.

HOSPITAL NOTES

Construction of the first unit of the proposed \$1,000,000 Des Moines General Hospital will be commenced at once.

The new building is to be at the present site of the hospital, East Twelfth and Des Moines streets.

The first unit will cost approximately \$350,000.

Finley Hospital was presented by a number of her medical staff with two copley prints, the original of which form a portion of the famous Frieze of the Boston public library, which are scenes from Abbey's Quest of the Holy Grail. The presentation was made as a Christmas gift.

The first scene, "The Departure," depicts Sir Galahad and other knights receiving the blessing from the bishop before starting on the dangerous quest, and the second, "The Castle of the Maidens," repre-

sents the delivery from the dungeon of the maidens imprisoned there. The pictures, which are 3x5 feet in dimensions, are for the present hung in the nurses' dining room.

PERSONAL MENTION

Dr. Martin F. Sellman formerly of Paynesville, Minnesota, has located in Lone Tree.

Dr. J. M. Soper formerly of Grand Island has located in Audubon.

Dr. Herbert Pease of Slater has located in Blairsburg which has for several months been without a physician.

Dr. F. F. Null of Ireton who has purchased an interest in the Hawarden Hospital and formed a partnership with Drs. Meyer and Roark will move to Hawarden.

Dr. William Vernon Cone of Iowa City has been awarded a fellowship as research worker in neuropathology by the national research council. Funds for this fellowship are provided by the Rockefeller fund and the general education board.

Dr. Lena A. Beach, superintendent of the Reformatory for Women at Rockwell City, has accepted the superintendency of the Home School for Girls at Saux Center, Minnesota. Dr. Beach took up her new work on January 1. The Home School for Girls at Saux Center is a reformatory for girls under twenty-one years of age. There are 353 girls at the institution at present. The farm consists of 880 acres, a part of which is in forest. Dr. Beach has been employed by the state of Iowa for fifteen years. She is nationally known for her success in her work.

Dr. and Mrs. W. L. Bywater celebrated their twenty-fifth wedding anniversary at their home at Manville Heights, on Saturday evening, December 30.

OBITUARY

Dr. Joseph Henry Hull, one of the pioneer physicians in Washington county, passed away very quietly Sunday morning, December 17, at his home on East Washington street, Washington, after six years of suffering. His was one of those pathetic cases, of a strong, capable physician suddenly stricken with paralysis, which affected his whole side and his power of speech.

J. H. Hull was the son of Dr. and Mrs. H. C. Hull and was born in Knox county, Ohio, on March 2, 1850. He would have been seventy-three years old on his next birthday. His mother died when he was a small lad and he was put into an Episcopal school in the East. He was a natural physician like his father.

Dr. Hull was a graduate of Kenyon College in Knox county, Ohio, being a room mate of the late Judge C. D. Legget of Fairfield. He graduated from

the Keokuk Medical College where he was a school mate of Dr. E. R. Jenkins, later taking post-graduate work at Bellevue Hospital, New York City. He is the last of a group of physicians who organized the Southeastern Iowa Medical Society in 1875.

On April 14, 1870, he was married to Elizabeth Jane Welch of Crawfordsville, finishing his education at Keokuk after he was married. After graduating they moved to Ainsworth, Iowa, where he practiced medicine for nineteen years. They came to Washington, Iowa, in 1893 and this has been the family home ever since. He was actively engaged in the practice of medicine in the county for forty-two years. Dr. Hull was a life member of the State Medical Society and attended all the meetings. He was a good student, and every advancement in medical science was eagerly studied by him.

To Dr. and Mrs. Hull, two children were born, Henry C., who is also a physician in Washington, practicing with his father for a number of years, and Daisy Mae, wife of C. W. Startzman of Philadelphia, Pennsylvania. There are four grand daughters, Catharine Jane, Josephine and Henrietta Hull, and Elizabeth Jane Startzman.

Beneath a bluff, brusque exterior, the "old doctor" as he was familiarly called by his friends, had a very tender heart. Many of his friends had occasion to find this out. The last few years his greatest happiness has been with his grand children. For several years he had a very high blood-pressure and in the winter liked to get away to Florida for a few months. He owned a grape fruit grove near Tampa, Florida, and was very much interested in everything pertaining to it.

Dr. J. C. Dunlavy, prominent Mason and pioneer oculist of Sioux City, died at his home, 1516 Nebraska street. He suffered a severe attack of heart trouble early in March of this year from which he never recovered.

Dr. Dunlavy was born December 24, 1849, on a farm in Davis county.

After receiving a few years' education at a rural school, he started to train himself for the teaching profession. He supported himself while attending a private normal school that had been started not far from his home. After completing this course he taught school for several years, during which period he devoted all of his spare time to reading medicine.

After engaging in general practice at Harlan for two years Dr. Dunlavy went to Louisville, Kentucky, where he took post-graduate work in medicine. He returned to Harlan and continued his practice for five more years. It was during this period he met and later married Miss Emily Tinsley of Harlan, the ceremony being performed October 5, 1882.

He attained his degree of doctor of medicine at the Keokuk College, when twenty-nine years old. He was graduated in three years with honors, having made the course in one year less than the prescribed time, his previous reading making this possible.

Dr. Dunlavy gave up his practice at Harlan and went to New York City where he devoted two years to the study of the eye, ear, nose and throat. Part of this time was taken up in interne service at Bellevue Hospital, in addition to his university course.

Completing his studies in New York, Dr. Dunlavy came to Sioux City in the spring of 1887. He opened an office here shortly after his arrival and maintained an active practice, until March of this year when he was stricken with what proved his last illness.

Dr. David Walton Farnsworth died at his home in Cherokee, December 16 following an illness of many weeks. He was born in Lowell, Ohio, March 2, 1851. He came to Iowa in 1878 where he taught school and read law, and later was admitted to the bar at Decatur. When the opportunity presented itself he attended the University of Iowa from which he graduated in 1885 with the degree of doctor of medicine. He located in Galva, Iowa, where he practiced his profession for thirty years, retiring from active practice in 1915, since which time he has busied himself by superintending his farming and other interests.

He was married to Anna E. Murphy in 1885. Two sons were born to them. Dr. Fordyce Barker Farnsworth of Storm Lake and Harold Emerson Farnsworth.

In 1915 he was united in marriage to Leonora Cree of Colorado Springs, Colorado, and since that time has made his home in Cherokee.

Dr. David H. Mingle was born January 12, 1848, at Aaronsburg, Pennsylvania. He entered the Jefferson Medical College in Philadelphia, where he graduated in 1871 and the same year he began the practice of medicine at Millheim, Pennsylvania.

On December 24, 1874 he was married to Miss M. Elizabeth Bair at Aaronsburg, Pennsylvania. To this union eight children were born, seven of whom are living and are located in or near Maxwell, Iowa.

In 1855 he moved from Millheim, Pennsylvania to Dakota, Illinois, where he followed his profession until 1897, when he removed to Maxwell, Iowa, where he has since lived and followed the practice of medicine until the time of his death, which, after a brief illness, occurred November 22, 1922, at the age of seventy-four years, ten months and ten days.

MARRIAGES

Dr. J. I. Jones of Manchester and Mrs. Irma Frank Howell of Independence were married October 19, 1922.

Dr. B. L. Tray and Miss Florence Minor, both of Marshalltown were married October 7, 1922.

SOME RECENT ADDITIONS TO IOWA STATE LIBRARY MEDICAL DEPARTMENT

Historical Building, Des Moines, Iowa

- Abbott, A. C.—Principles of bacteriology.....1920
 Alvarez, W. C.—Mechanics of the digestive tract.....1922
 American Academy of Ophthalmology and Oto-laryngology.....1921
 American Institute of Medicine—International Medical and
 Surgical Survey—Monthly abstracts from five hundred
 medical periodicals (fifteen countries being represented)
 in the following subjects: Anatomy, Physiology; Sur-
 gery; Pediatrics; Neurology and Psychiatry; Dermatology
 and Syphilology; Ophthalmology, Otology and Rhino-
 laryngology; Gastro-enterology, Urology; Roentgenology
 and Radiotherapy; Public Health and Medical Sociol-
 ogy; Bacteriology, Research; Gynecology and Obstetrics;
 Medicine.....1922
 Baetjer, F. H. and Waters, C. D.—Injuries and diseases of
 the bones and joints.....1921
 Bailey, Harriett—Nursing mental diseases.....1921
 Ballance, C. A.—Bradshaw Lecture on the surgery of the
 heart.....1920
 Ballance, C. A.—Surgery of the temporal bone. 2 vols.....1919
 Bancroft, W. D.—Applied colloid chemistry.....1921
 Barker, L. F., editor; Hoskins, N. G., associate editor; Mosen-
 thal, H. O., associate editor—Endocrinology and Meta-
 bolism 5 vols.....1922
 Barr, M. W. and Maloney, E. F.—Types of mental defec-
 tives.....1920
 Baruch, Simon—Epitome of hydrotherapy.....1920
 Bastedo, W. A.—Materia Medica: Pharmacology: Therapeu-
 tics: Prescription Writing.....1919
 Berman, Louis—The glands regulating personality.....1922
 Bishop, Louis F.—Arteriosclerosis.....1921
 Boyd, M. F.—Practical preventive medicine.....1920
 Brill, A. A.—Psychoanalysis.....1922
 Brown, Haydn—Advanced suggestion.....1922
 Bulkley, L. D.—Cancer and its nonsurgical treatment.....1921
 Buzzard, E. F.—Pathology of the nervous system.....1922
 Campbell, W. F.—Text-book of surgical anatomy.....1921
 Carey, Harry W.—Introduction to bacteriology for nurses.....1920
 Clark, W. I.—Health service in industry.....1921
 Cobb, I. G.—Organs of internal secretion.....1922
 Cotton, N. A.—Defective delinquent and insane.....1921
 Crile, G. W.—Physical interpretation of shock, exhaustion
 and restoration.....1921
 Crotti, Andre—Thyroid and thymus.....1922
 Cumston, C. G. and Patry, Georges—Surgical treatment of
 non-malignant affections of the stomach.....1921
 Danysz, J.—Evolution of disease.....1921
 Davis, A. E.—Hypnotism and treatment by suggestion.....1920
 Davis, E. F.—Manual of obstetrics.....1919
 Davis, Haldin—Skin diseases in general practice.....1920
 Davis, J. S.—Plastic surgery.....1919
 Dawson, Percy M.—Elements of Anatomy and Physiology for
 Nurses.....1917
 Delafield, F. and Pruden, T. M.—Text-book of pathology.....1919
 Dobell, C. and O'Connor, F. W.—Intestinal protozoa of man.....1921
 Dunning, W. M.—Submucous resection of the nasal septum.....1921
 Dunton, W. R.—Reconstruction therapy.....1919
 Eliason, Eldridge—Practical bandaging.....1921
 Elliot, R. H.—Treatise on glaucoma.....1922
 Ellis, Havelock—Evolution of modesty, phenomena of sexual
 periodicity, auto-erotism.....1910
 Ellis, Havelock—Sexual inversion.....1900
 Emerson, C. P.—Clinical diagnosis.....1921
 Farmer, Fannie M. Boston Cooking-School cook book.....1921
 Fenwick, Bedford—Uterine fibroids and other pelvic tumors.....1920
 Fischer, M. H.—Oedema and Nephritis.....1921
 Fones, A. C.—Mouth Hygiene.....1921
 Frank, R. T.—Gynecological and obstetrical pathology, in-
 cluding chapters on the normal histology and physiology
 of the female genital tract.....1922
 Friedenwald, J. and Ruhrah, John—Dietetics for nurses.....1920
 Funk, Casimir—Vitamines.....1922
 Gallichan, W. M.—Sex education.....1921
 Galloway, T. W.—Biology of sex.....1913
 Gardener, M. S.—Public health nursing.....1922
 Giles, A. E.—Sterility in women.....1919
 Gittings, J. C.; Knowles, F. C., and Ashhurst, A. P. C.—
 Tuberculosis in infancy and childhood.....1922
 Godlee, Rickmann, ed.—Six papers by Lord Lister.....1921
 Goepf, R. M.—State board questions and answers.....1921
 Graham, Douglas—Massage manual treatment remedial move-
 ments.....1913
 Graves, W. P.—Gynecology.....1921
 Griffith, J. P.—Diseases of infants and children.....1921
 Gross, Louis—Blood supply to the heart in its anatomical and
 clinical aspects.....1921
 Groves, E. H.—Modern methods of treating fractures.....1922
 Hahnemann, Samuel—Organon of medicine.....1922
 Harrower, H. R.—Practical organotherapy.....1922
 Harvey Lectures—1906-07—1919-20 inclusive.....1922
 Hare, Hobart A.—Text-book of practical therapeutics with
 especial reference to the application of remedies.....1922
 Hawk, P. B.—Practical physiological chemistry.....1921
 Hay, John—Graphic methods in heart disease.....1921
 Head, Joseph—Modern dentistry.....1920
 Hegner, R. W. and Cort, W. W.—Diagnosis of protozoa and
 worms parasitic in man.....1921
 Heineman, P. G.—Milk.....1921
 Hertzler, A. E.—Clinical surgery by Case Histories 2v. Dis-
 eases of abdominal and genito-urinary organs. Head,
 neck, thorax, and extremities.....1921
 Hertzler, A. E.—Diseases of the thyroid gland.....1922
 Heuckel, Oliver—Habit of health—how to gain and keep it.....1922
 Hill, H. W.—Sanitation for public health nurses.....1919
 Hill, L. W.—Practical infant feeding.....1922
 Hirst, B. C.—Operative Gynaecology—Atlas.....1919
 Hiss, P. H. and Zinsser, Hans—Text-book of bacteriology.....1922
 Holt, L. E.—Care and feeding of children.....1922
 Holt, L. E.—Diseases of infancy and childhood.....1922
 Hopkins, W. B.—The roller bandage.....1911
 Howell, Conrade—Series of lectures on surgical nursing and
 hospital technic.....1913
 Howell, W. H.—Text-book of physiology.....1921
 Hudson, Bernard—Aids to medicine.....1921
 Hutchinson, Robert; Sherron, James and Coleman, Warren—
 Index of treatment.....1921
 International medical annual and practitioner's index.....1921
 Jackson, J. A., Salisbury, H. M.—Outwitting our nerves.....1922
 Jansen, Murk—On bone formation.....1920
 Jordan, E. O.—General bacteriology.....1922
 Kerley, C. G.—Practice of pediatrics.....1920
 Keyes, E. L.—Venereal diseases, including stricture of the
 male urethra.....1880
 Kirkpatrick, Henry—Cataract and its treatment.....1920
 Kosmak, G. W.—Toxemias of pregnancy.....1922
 Lamson, P. D.—Heart rhythms.....1921
 Leftwich, R. W.—Index of symptoms with diagnostic meth-
 ods.....1920
 Lord, F. T.—Pneumonia.....1922
 Luke, T. D.—Manual of physio-therapeutics.....1922
 Lumb, Norman—Gonococcal infection in the male.....1921
 Luys, Georges—Text-book on gonorrhea and its complications.....1922
 Luys, Georges—Treatise on cystoscopy and urethroscopy.....1922
 Mackenzie, sir James—Heart diseases and pregnancy.....1921
 Mackenzie, sir James—Symptoms and their interpretations.....1920
 Maclean, Hugh—Modern methods in the diagnosis and treat-
 ment of renal disease.....1922
 Macleod, J. N. H.—Diseases of the skin.....1921
 Macmillan, Mary—Massage and therapeutic exercises.....1921
 Mann, W. L. and Folsom, S. A.—Manual on foot care and
 shoe fitting.....1920
 Marshall, C. F. and French, E. G.—Syphilis and venereal dis-
 eases.....1921
 Marshall, J. S.—Mouth hygiene.....1916
 Mathews, A. P.—Physiological chemistry.....1921
 May, C. H.—Manual of diseases of the eye.....1922
 Mayo Clinic—Collected papers.....1922
 Meara, F. S.—Treatment of acute infectious diseases.....1921
 Mitchell, S. W.—Doctor and patient.....1904
 Monrad-Krohn, G. H.—Clinical examination of nervous sys-
 tem.....1921
 Moorhead, J. J.—Traumatic surgery.....1921
 Morgan, T. H.—Physical basis of heredity.....1919
 Morison, Rutherford—Surgical contributions from 1881-1916.....1921
 Motelli, Eugenio—Treatments of wounds of lungs and pleura.....1920
 Much, Hans—Tuberculosis of children.....1921
 Munde Paul F.—Minor surgical gynecology: manual of
 uterine diagnosis and lesser technicalities of gynecological
 practice.....1880
 Munson, F. E.—Hygiene of communicable diseases.....1920
 Murphy, P. K.—Haemorrhoids non-operative treatment.....1922
 Muthu, D. C.—Pulmonary tuberculosis, its etiology and
 treatment.....1922
 New York (City)—Board of water supply—annual report.....1922
 Nicholson, Percival—Lippincott's blood-pressure and clinic
 chart.....1921
 Oertel, Horst—General pathology.....1921
 Oppenheimer, Carl—Toxins and anti-toxins.....1906
 Osler, sir William—Evolution of modern medicine.....1921
 Lippincott, J. B.—Surgical and gynecological nursing.....1921
 Pierce, W. D.—Sanitary entomology.....1921
 Pottinger, F. M.—Symptoms of visceral disease.....1922
 Pope, Amy E.—Essentials of dietetics in health and disease.....1917
 Ravenal, M. P.—Half century of public health.....1921
 Reuss, August von—Diseases of the new born.....1921
 Richards, Linda—Reminiscences of Linda Richards—Amer-
 ica's first trained nurse.....1915
 Rixon, C. H. L.—Anxiety and hysteria.....1921
 Roberts, J. G.—Manual of bacteriology and pathology for
 nurses.....1920
 Robertson, T. B.—Principles of biochemistry for students of
 medicine, agriculture and related sciences.....1920
 Robertson, W. F.—Therapeutic immunization.....1921
 Rogers, sir Leonard—Bowel disorders in the tropics.....1921
 Russell, F. F.—Text-book of bacteriology.....1922
 Russell, William—Stomach and abdomen.....1921
 Sabourin, Charles—Rational treatment of pulmonary tuber-
 culosis.....1921
 Sajous, C. de M.—Internal secretion and principles of Med-
 icine 2v.....1922
 Saleeby, C. W.—Eugenic prospect.....1921
 Schaeffer, J. P.—Nose, paranasal sinuses, nasolacrimal
 passageways, and olfactory organ in man.....1920
 Scheppegrell, Wm—Hayfever and asthma.....1922

- Schamberg, J. F.—Diseases of the skin and eruptive fevers....1921
 Scripture, May K.—Manual of exercises for the correction of
 speech disorders.....1919
 Scudder, C. L.—Treatment of fractures with notes upon a
 few common dislocations.....1922
 Sequeira, J. H.—Diseases of the skin.....1919
 Shattuck, G. C.—Principles of medical treatment.....1921
 Short, A. R.—New physiology, surgery and general practice.....1920
 Smeeton, M. A.—Bacteriology for nurses.....1922
 Sobotta, Johannes—Atlas and text-book of human anatomy,
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 Stookey, B. P.—Surgical and mechanical treatment of peri-
 pheral nerves.....1922
 Sutton, R. L.—Diseases of the skin.....1921
 Terrill, B. M.—Household management.....1919
 Thorpe, F. N.—William Pepper.....1904
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 Tilney, Frederick—Epidemic encephalitis (encephalitis leth-
 argica).....1920
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 and joints.....1914
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 application.....1921
 Underhill, F. P.—Manual of selected biochemical methods.....1921
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 Walker, Norman—Introduction to dermatology.....1922
 Walsh, J. J.—Old time makers of medicine.....1911
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 position.....1919
 Willius, F. A.—Clinical electrocardiography.....1922
 Wilson, R. H.—Clinical study of symptoms and treatment of
 circulatory diseases in general practice.....1921

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Historical Building, Des Moines, Iowa

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 American Journal of Anatomy.
 American Journal of Diseases of Children.
 American Journal of Hygiene.
 American Journal of Ophthalmology.
 American Journal of Pharmacy.
 American Journal of Psychiatry.
 American Journal of Physiology.
 American Journal of Public Health.
 American Journal of Roentgenology.
 American Journal of Surgery.
 American Journal of Syphilis.
 American Journal of the Medical Sciences.
 American Medical Association Journal.
 American Review of Tuberculosis.
 Annals of Medical History.
 Annals of Otolaryngology, Rhinology, Laryngology.
 Annals of Surgery.
 Archives des Maladies de l'Appareil Digestif.
 Archives of Dermatology and Syphilology.
 Archives of Diagnosis.
 Archives of Internal Medicine.
 Archives of Neurology and Psychiatry.
 Archives of Pediatrics.
 Archives of Surgery.
 Boston Medical and Surgical Journal.
 British Journal of Children's Diseases.
 British Journal of Ophthalmology.
 British Journal of Surgery.
 British Medical Journal.
 California State Board of Health Monthly Bulletin.
 California State Journal of Medicine.
 Canadian Medical Association Journal.
 Chicago Medical Recorder.
 Cincinnati University Medical Bulletin.
 Colorado Medicine.
 Dementia Praecox Studies.
 Dental Digest.
 Deutsche medizinische Wochenschrift.
 Deutsches Archiv für klinische Medizin.
 Endocrinology.
 Heart.
 Illinois Medical Journal.
 Index Medicus.
 Indiana State Medical Association Journal.
 Iowa Homeopathic Journal.
 Iowa State Medical Society Journal.
 Johns Hopkins Hospital Bulletin.
 Journal of Bacteriology.
 Journal of Biological Chemistry.

- Journal of Cancer Research.
 Journal of Dental Research.
 Journal of Experimental Medicine.
 Journal of General Physiology.
 Journal of Immunology.
 Journal of Industrial Hygiene.
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 Journal of Laboratory and Clinical Medicine.
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 Journal of Organotherapy.
 Journal of Orthopaedic Surgery.
 Journal of Pathology and Bacteriology.
 Journal of Pharmacology and Experimental Therapeutics.
 Journal of Urology.
 Kansas Medical Society Journal.
 Lancet.
 Massachusetts General Hospital Case Records.
 Medical Association of Georgia Journal.
 Medical Clinics of North America.
 Medical Science Abstracts and Reviews.
 Medizinische Klinik.
 Mental Hygiene.
 Military Surgeon.
 Minnesota Medicine.
 Missouri State Medical Association Journal.
 Modern Hospital.
 National Dental Association Journal.
 Nebraska State Medical Journal.
 New York Medical Journal.
 Office International d'Hygiene Publique Bulletin.
 Ophthalmic Literature.
 Pennsylvania Medical Journal.
 Philippine Islands Medical Association Journal.
 Physiological Reviews.
 Presse Medicale.
 Public Health Nurse.
 Quarterly Cumulative Index to Current Medical Literature.
 Quarterly Journal of Medicine.
 Rhode Island Medical Journal.
 Royal Society of Medicine Proceedings.
 Saint Paul Bureau of Health, Monthly Bulletin.
 Surgical Clinics of North America.
 Surgery, Gynecology and Obstetrics.
 Texas State Journal of Medicine.
 United States Naval Medical Bulletin.
 United States Public Health Service Public Health Reports.
 Virchows Archive für Pathologische Anatomie und Physiologie.

BOOK REVIEWS

ENDOCRINE GLANDS AND THE SYMPATHETIC SYSTEM

By P. Lereboullet, P. Harvier H. Carrion, A. G. Guillaume. Translated by F. Raoul Mason, M.D. Instructor in Pediatrics, New York. Post-Graduate Medical School and Hospital, Etc. With the Collaboration of Daniel R. Agers, A.B., M.D. Assistant Professor of Gynecology, New York. Post-Graduate Medical School and Hospital. J. B. Lippincott Co., Philadelphia and London, 378 Pages.

This excellent book is an exposition of the French school of medicine and a record of the work of French investigators in this important branch of medicine. The first division presents, General Considerations on the Endocrine Glands, their Pathology and the Sympathetic System including treatment by P. Lereboullet. P. Harvier takes up the Pathology of the Endocrine Glands, including the Functions of the Thyroid; Thyroid Insufficiency Syndromes; The Syndromes of Hyperfunction of the Thyroid; The Pathology of the Thymus. Following which comes the Pathology of the Adrenals, including Syndromes of Adrenal Insufficiency; Syndromes of Hyperfunction of the Thyroid; The Pathology of the Parathyroid Glands and Pathology of the Thymus.

Following which comes the Pathology of the Adrenals, including Syndromes of Adrenal Insufficiency; Syndromes of Hyperfunction of the Adrenals and Adrenal Tumors and Dystrophies of Adrenal Origin. Then comes the Pathology of the Pituitary and the Pathology of the Pineal Gland including symptoms and diagnosis.

Three chapters are devoted to the sexual glands, testicles, ovaries and mammary glands, and forms the basis of endocrine treatment of disorders of these organs. The author holds that adjusted organotherapy is the rational treatment of these disorders.

In summing up the subject of internal secretion Harvier states, "The glands of internal secretion make up a system, each one of them being more or less dependent on the other. They are connected with other glands by synergy, antagonism or supplement each other, so that the lesion of one gland causes modification in others," and proceeds with a brief consideration of pleuriglandular syndromes.

The Pathology of the Sympathetic System; an introduction to the study of the nervous system of vegetative life from an anatomical and physiological point of view, is presented by A. C. Guillaume, considered from the point of view of cranio-pelvic system, and autonomic system, in relation of endocrine glands. Dr. P. Harvier adds a chapter on the Pathology of the Greater Sympathetic. In the closing chapter H. Carrion considers organotherapy including Pharmacological Tests and the preparation of various products used in Organotherapy. The subject of endocrine glands is presented in a brief and convenient manner by the joint work of several experimenters and brings the subject of pathology and treatment up to date although it is admitted that many points are still obscure.

BRONCHOSCOPY AND ESOPHAGOSCOPY

A Manual of Peroral Endoscopy and Laryngeal Surgery of Chevalier Jackson, M.D., Professor of Laryngology, Jefferson Medical College; Professor of Bronchoscopy and Esophagoscopy, Graduate School of Medicine, University of Pennsylvania. Octavo of 346 Pages with 112 Illustrations and Four Colored Plates. Cloth, \$5.50.

This is truly a wonderful book and is the only one of its kind in print.

It is written by a preeminent authority, the pioneer in the American field of peroral endoscopy. It presents in a concise form a practical working text-book on endoscopy and laryngeal surgery.

It is divided into thirty-nine chapters which take up the Instrumentarium; Anatomy; Preparation of patient; Anaesthesia; Bronchoscopic Oxygen Insufflation; Position of Patient; Direct Laryngoscopy; Bronchoscopic; Esophagoscopy; Acquiring Skill; Foreign Bodies, Their Location, Removal and Me-

chanical Problems Connected Therewith; Unsuccessful Bronchoscopy; Esophagoscopy; Pleuroscopy; Four chapters on Benign Growths; Three Chapters on Malignant Disease; seven chapters on the various diseases; Gastrosocopy; Tracheotomy; Chronic Stenosis; Decannulation after cure. This is followed with a bibliography and an index.

Dr. Jackson's teaching is specific, to the point in as much detail as is necessary but with no unnecessary words. The illustrations are reproductions of the author's own drawing, presenting the result of experience gained from thousands of cases. It is this teaching that has taught the internist and general practitioner that a foreign body in the lung has come to be recognized as the first diagnostic possibility to be considered in every acute and chronic case. "Jackson" should be read and reread by every one doing nose and throat work, by the internist and general surgeon, it cannot be recommended too highly.

Weih.

LESSONS ON TUBERCULOSIS

For the Household, Showing How to Prevent Tuberculosis. How to Recognize its First Symptoms. How to Win Back Health. By Charles E. Alkinson, M.D. Illustrated. Funk and Wagnalls Co., New York and London, 1922. Price \$2.50.

This book is apparently written for the general reader by one who has had large experience in several tuberculosis sanitariums in California. It is a well known fact that a successful treatment of tuberculosis depends in large measure on an intelligent co-operation of the patient with his physician and more that a patient should be prepared to recognize at an early date the signs which indicate the beginning of a tuberculous disease and which should lead him to consult a physician. We have many books for the physician on the etiology, diagnosis and treatment of tuberculosis but often it is too late for the best results. There are many diagnostic clinics on tuberculosis which are educational in purpose but not quite equal in effect to a well written and attractive book, which may be read deliberately and carefully. It will be quite impossible to review in detail the contents of this book. In the beginning certain glimpses of important matters in relation to tuberculosis are presented which will serve as warning of the approach of some serious ailment. How Tuberculosis is Spread and How to Prevent Tuberculosis, How to Recognize Tuberculosis. With chapter six begins the story of You and Your Physician, planning for recovery, How Nature Heals. Then the treatment, questions of rest and exercise, eating, hints on nursing. Considerable space is given to The Truth About Climate, and so on.

The book is attractively illustrated and interesting aside from its usefulness as a help and guide in the prevention and management of tuberculosis.

(Continued on Advertising Page xvi)

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BOOK REVIEWS

(Continued from Page 120)

DISEASES OF THE THYROID GLAND

By Arthur E. Hertzler, M.D., F.A.C.S., Professor of Surgery in the University of Kansas School of Medicine. Surgeon to the Halstead Hospital, Halstead, Kans.; Surgeon to St. Luke's Hospital and St. Mary's Hospital, Kansas City, Mo., and to Provident Hospital, Kansas City, Kansas. With a Chapter on Hospital Management of Goiter Patients, by Victor E. Chesky, A.B., M.D. Associated Surgeon to Halstead Hospital; 106 Original Illustrations. C. V. Mosby Co., St. Louis, Mo., 1922.

Contributions from Dr. Hertzler at once attract attention particularly because of the original character of his writings. Very few authors bring in their individuality equally with Dr. Hertzler, therefore, we feel the presence of the author from the beginning to the end of the book. The two first chapters bring in questions relating to Etiology and Pathogenesis of Goiter with the Normal and Pathologic Anatomy of the Thyroid Gland beautifully illustrated, and as the book is printed on heavy paper the illustrations stand out well. In chapters three and four are presented the Symptomatology of Diseases of the Thyroid Gland and Diagnosis. These chapters are extremely helpful in the diagnosis of goiter in its various forms and associated conditions. The author in chapter five, under Prognosis, states that "no phase in the discussion of a disease is so difficult as the abstract consideration as to prognosis." This particularly relates to diseases of the thyroid and he refers to the misleading study of statistics which may be correct today and all wrong at some future date. Now comes chapter six relating to Goiters in Unusual Places. Chapter seven is by Dr. Victor E. Chesky on Hospital Management of Goiter Patients, a subject that should always be considered as of fundamental importance. The remaining chapters are devoted to Treatment, Topographic Anatomy and the Technique of Operations.

We have many books and voluminous papers on diseases of the thyroid gland but no one better adapted to the use of the general practitioner and the general surgeon. The publishers are to be congratulated on the general appearance of the book, particularly the paper and type.

THE SURGICAL CLINICS OF NORTH AMERICA

San Francisco Number, April, 1922. W. B. Saunders Company. Price, \$12.00 Cloth. Paper \$16.00. Cloth Net.

This number takes us to the Pacific Coast and introduces us to the surgery of San Francisco and to names not so familiar to us of the Middle West. But

when we examine the contents we find that surgery is practically the same in all our great cities.

There are sixteen clinics in this number. The first is by Dr. John H. Woolsey of the University Hospital of California under the title of Traumatic Fracture of the Mandible followed by the treatment by Serum, with discussion and remarks on other methods of treatment. Dr. Alfred B. Spalding of Stanford University Hospital presents a case of Tuberculosis of the Cervix. Dr. Howard C. Naffziger of the University of California Hospital presents a rather extended discussion of Spinal Cord Tumors.

Dr. Thomas W. Huntington of the University of California Hospital discusses the Radical Treatment of Carbuncles, a brief but interesting paper.

Dr. P. K. Gilman presents a clinic on Some Surgical Complications of Amebiasis, a subject of considerable interest in California. These titles are presented as illustrating the general character of the California number, it being quite impossible to consider all the valuable clinics. The volume is very creditable to California surgery.

The June or Chicago number of the Surgical Clinics of North America brings to our attention the familiar names of Albert J. Ochsner, Allan B. Knave, Charles L. Mix, A. E. Halstead, and David C. Straus who brings a series of four cases of Gunshot Wounds of the Kidney with extended observations on the subject. Dr. A. D. Bevan presents a well filled clinic of interesting cases.

Dr. Hermann L. Krestschmer brings a valuable contribution on Traumatic Kidney, interesting from the standpoint of industrial surgery. This number presents material of unusual value but space does not permit mention of more than a few of the contributions.

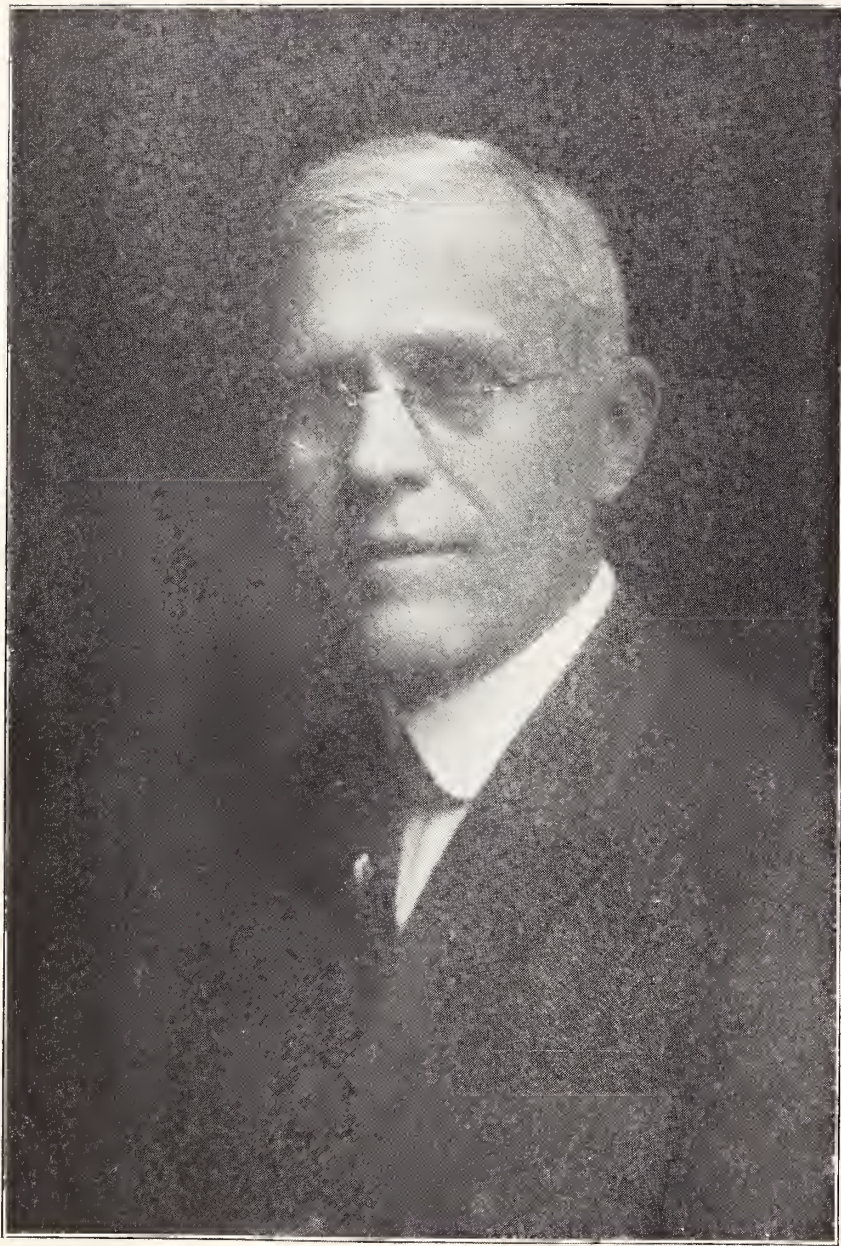
APPLIED CHEMISTRY

An elementary Text-Book for Secondary Schools. By Fredus N. Peters, Ph. D., Instructor in Central High School, Kansas City, Mo. C. V. Mosby Company, St. Louis, Mo., 1922. Price \$3.50.

This book appears to have been written for the use of students in high schools and is well adapted to the needs of students in chemistry. It is printed on excellent paper, well illustrated and unusually attractive in appearance.

A referendum vote in Colorado, November 7 resulted in a defeat of the Antivivisection measure presented by the enemies of experimental medicine. The medical profession in Colorado made a vigorous campaign and are to be congratulated.

You will need your 1923 membership card for registration at Ottumwa. Have you paid your 1923 dues to your local secretary?



CHARLES J. SAUNDERS, M.D.
PRESIDENT

IOWA STATE MEDICAL SOCIETY
1922-1923

The Journal of the Iowa State Medical Society

VOL. XIII

DES MOINES, IOWA, APRIL 15, 1923

No. 4

IOWA STATE MEDICAL SOCIETY

SEVENTY-SECOND ANNUAL SESSION

OTTUMWA

MAY 9, 10, 11, 1923

Program

OPENING EXERCISES

Wednesday, May 9

9:00 a. m.

Call to Order by the President—

CHARLES J. SAUNDERS, M.D., Fort Dodge

Invocation—

REV. HENRY J. HOGAN, Ottumwa

Address of Welcome for the City—

HON. CHARLES CHILTON, Mayor, City of Ottumwa

Address of Welcome for the Profession—

WILLIAM J. HERRICK, M.D., Ottumwa
President Wapello County Medical Society

Response—

FRANK E. SAMPSON, M.D., Creston

SCIENTIFIC PROGRAM

Section on Medicine—

Chairman, FRANK J. ROHNER, M.D., Iowa City

Section on Surgery—

Chairman, WILLIAM W. BOWEN, M.D., Fort Dodge

Section on Ophthalmology, Otology and Rhinology—

Chairman, RALPH H. PARKER, M.D., Des Moines

Official Reporter, General Session—

MISS ADELAIDE FOLSOM, Ripon, Wisconsin

Reporter, House of Delegates—

MISS IDA J. BRINTON, Des Moines

Wednesday, May 9

9:30 a. m.

1. Our Present Knowledge of Spleen Function and Its Relation to Spleen Surgery—

EDWIN R. SHANNON, M.D., Waterloo, *twenty minutes*

Discussion opened by OLIVER J. FAY, M.D., Des Moines, *five minutes*

2. A Surgical Study of Gastro-Duodenal Ulcers—

JACOB S. WEBER, M.D., Davenport, *twenty minutes*

Discussion opened by CHARLES J. ROWAN, M.D., Iowa City, *five minutes*

3. Diphtheria, Its Diagnosis, Complications and Treatment—

LEE F. HILL, M.D., Des Moines, *twenty minutes*

Discussion opened by CHARLES A. WATERBURY, M.D., Waterloo, *five minutes*

4. Tuberculous Peritonitis and Its Treatment—

LESTER C. KERN, M.D., Waverly, *twenty minutes*

Discussion opened by PAUL A. WHITE, M.D., Davenport, *five minutes*

5. Address of Chairman Section on Medicine—

FRANK J. ROHNER, M.D., Iowa City, *thirty minutes*

Wednesday, May 9

2:00 p. m.

6. Oration in Surgery—

ELBERT E. MUNGER, M.D., Spencer, *thirty minutes*

7. The Relation of Psychology to Medicine—

CARL E. SEASHORE, Ph.D., Iowa City (by invitation), *twenty minutes*

Discussion opened by FRANK A. ELY, M.D., Des Moines, *five minutes*

8. Address on Surgery—The Diagnosis of Some Surgical Conditions—

MALCOLM L. HARRIS, M.D., Professor of Surgery, Chicago Polyclinic, Chicago, Illinois

9. Acute Osteomyelitis, with Special Reference to the Histology of Growing Bones

(Lantern Demonstration)—

ARTHUR C. STOKES, M.D., Omaha (by invitation), *twenty minutes*

10. Osteomyelitis Secondary to Foci in the Skin—

CLARENCE E. LYNN, M.D., Dubuque, *twenty minutes*

Discussion (Papers Nos. 9 and 10) opened by WILLIAM JEPSON, M.D., Sioux City and HOWARD L. BEYE, M.D., Iowa City, *ten minutes*

11. The Management of Cancer of the Breast—

ARTHUR W. ERSKINE, M.D., Cedar Rapids, *twenty minutes*

Discussion opened by THOMAS A. BURCHAM, M.D., Des Moines, *five minutes*

MEETING HOUSE OF DELEGATES

Hotel Ottumwa

4:00 p. m.

Wednesday, May 9

8:00 p. m.

President's Reception

Thursday, May 10
9:00 a. m.

12. Chorioepithelioma of the Uterus Following and Resulting from Hydatid Mole—
GUY T. McCauliff, M.D., Webster City, *twenty minutes*
Discussion opened by CHARLES E. RUTH, M.D., Des Moines, *five minutes*
13. Present Day Needs in an Examination for Life Insurance—
MARTIN I. OLSEN, M.D., Des Moines, *twenty minutes*
Discussion opened by GEORGE E. DECKER, M.D., Davenport, *five minutes*
14. Somatic Changes in Relation to Insanity—
GEORGE DONOHUE, M.D., Cherokee, *twenty minutes*
Discussion opened by CLARENCE E. VAN EPPS, M.D., Iowa City, *five minutes*
15. Renal Tuberculosis—
ALBERT A. SCHULTZ, M.D., Fort Dodge, *twenty minutes*
Discussion opened by DONALD MACRAE, JR., M.D., Council Bluffs, *five minutes*
16. General Paresis—
SAMUEL T. ORTON, M.D., Iowa City, *twenty minutes*
Discussion opened by MAX F. WITTE, M.D., Clarinda, *five minutes*
17. Address of Chairman Section on Surgery—
WILLIAM W. BOWEN, M.D., Fort Dodge, *thirty minutes*

Thursday, May 10
2:00 p. m.

18. Oration in Medicine—The Four Branches—
FRANK M. FULLER, M.D., Keokuk, *thirty minutes*
19. A Review of the Work, Present Plans and Prospects of the Medical Field Activities Committee (Lantern Demonstration)—
FRANK E. SAMPSON, M.D., Creston, *twenty minutes*
Discussion opened by WALTER L. BIERRING, M.D., Des Moines, *five minutes*
20. Address in Medicine—The Scientific Conquest of the Air and Its Influence on the Progress of Rationalism—
CHARLES F. HOOVER, M.D., Professor of Medicine Western Reserve School of Medicine, Cleveland, Ohio
21. Suppurative Pleurisy—
HAROLD A. SPILMAN, M.D., Ottumwa, *twenty minutes*
Discussion opened by ALANSON M. POND, M.D., Dubuque, *five minutes*
22. The Anemnesis and Its Place in Diagnosis—
JULIUS S. WEINGART, M.D., Des Moines, *twenty minutes*
Discussion opened by CAMPBELL P. HOWARD, M.D., Iowa City, *five minutes*
23. Diseases of the Ischio-Rectum—
ANTHONY P. DONOHUE, M.D., Davenport, *twenty minutes*
Discussion opened by JOHN E. BRINKMAN, M.D., Waterloo, *five minutes*

Thursday Evening
8:00 p. m.

24. President's Address—
CHARLES J. SAUNDERS, M.D., Fort Dodge
25. Address Guest of Section on Ophthalmology, Otolaryngology and Rhinology—Some Practical

Considerations of the Physiology of the Upper Respiratory Tract—

H. I. LILLIE, M.D., Chief of the Ear, Nose and Throat Section Mayo Clinic, and Professor of Otorhinolaryngology in the Mayo Foundation, Rochester, Minnesota

Smoker following Scientific Program

Friday, May 11
9:00 a. m.

26. Operative Fractures (Lantern Demonstration)—
CHARLES S. JAMES, M.D., Centerville, *twenty minutes*
Discussion opened by JOHN C. ROCKAFELLOW, M.D., Des Moines, *five minutes*
27. Final Results from Treatment of Fractures of the Arm (Lantern Demonstration)—
CHANNING E. DAKIN, M.D., Mason City, *twenty minutes*
Discussion opened by PHILIP B. McLAUGHLIN, M.D., Sioux City, *five minutes*
28. Pyelitis of Pregnancy (Lantern Demonstration)—
FREDERICK H. FALLS, M.D., Iowa City, *twenty minutes*
Discussion opened by ARTHUR H. McCREIGHT, M.D., Fort Dodge, *five minutes*
29. Creatinin—Its Clinical Significance—
CARYL L. NELSON, M.D., Waterloo, *twenty minutes*
Discussion opened by EDWARD R. POSNER, M.D., Des Moines, *five minutes*
30. Some Remarks on the Status of Present Day Obstetrics—
EVERT C. HARTMAN, M.D., Algona, *twenty minutes*
Discussion opened by WILLIAM L. ALLEN, M.D., Davenport, *five minutes*
31. Masked Infection Passing as Neurasthenia—
PAUL J. VAN METRE, M.D., Rockwell City, *twenty minutes*
Discussion opened by ORA F. PARISH, M.D., Grinnell, *five minutes*
32. Report of Transactions House of Delegates—
TOM B. THROCKMORTON, M.D., Secretary, Des Moines

OPHTHALMOLOGY, OTOTOLOGY AND RHINO-LARYNGOLOGY

Meeting Place—Orchard Room, Ballingall Hotel

Thursday, May 10
9:00 a. m.

Address of Chairman—

RALPH H. PARKER, M.D., Des Moines

Symposium on Middle Ear and Mastoid Disease

1. Mastoiditis in Infants—
WM. H. JOHNSTON, M.D., Muscatine
2. Routine Procedure and Treatment of Acute Otorrhea, Particularly in Children—
ORIS WOLFE, M.D., Marshalltown
3. Acute Mastoiditis, its Prevention and Treatment—
CHARLES B. TAYLOR, M.D., Ottumwa
4. End Results in Suppurative Otitis Media—
THOS. U. McMANUS, M.D., Waterloo
Discussion opened by ALBERT H. BYFIELD, M.D., Iowa City;
GORDON F. HARKNESS, M.D., Davenport

5. Bilateral Peritonsillar Abscess, with Case Report of Unusual Features—
HENRY G. LANGWORTHY, M.D., Dubuque
Discussion opened by CHARLES P. FRANTZ, M.D., Burlington
6. Malignancy of the Tongue—
IRA NELSON CROW, M.D., Fairfield
Discussion opened by DELL E. GRAHAM, M.D., Ottumwa
7. Eye, Ear, Nose and Throat Symptoms Due to Dental Pathology—
FREDERICK E. FRANCHERE, M.D., Sioux City
Discussion opened by FRANK W. DEAN, M.D., Council Bluffs

- Symposium on Tuberculosis of the Eye
8. Intra Ocular Tuberculosis—
ELLIS G. LINN, M.D., Des Moines
9. Extra Ocular Tuberculosis—
GEORGE A. MAY, M.D., Des Moines
Discussion opened by JAMES A. DOWNING, M.D., Des Moines; JOHN H. PECK, M.D., Des Moines
10. Corneal Wounds—
W. SLEEPER WINDLE, M.D., Oskaloosa
Discussion opened by CHANLEY J. LUKENS, M.D., Oskaloosa
11. Conservation of Vision in Children—
RALEIGH R. SNYDER, M.D., Des Moines
Discussion opened by ROLLIN W. WOOD, M.D., Newton
12. The Practical Value of the X-Ray to the Eye, Ear, Nose and Throat Specialist—
BUNDY ALLEN, M.D., Iowa City
Discussion opened by HERBERT M. DECKER, M.D., Davenport

HOUSE OF DELEGATES

Hotel Ottumwa

Wednesday, May 9

4:00 p. m.

- Roll Call
- Report of Secretary
- Report of Treasurer
- Report of Council
- Report of Trustees
- Report of Standing Committees
- Memorials and Communications
- New Business
- Election of Committee on Nominations

Thursday, May 10

8:00 a. m.

- Roll Call
- Reading of Minutes
- Report of Committees
- Unfinished Business
- New Business

Friday, May 11

8:00 a. m.

- Roll Call
- Reading of Minutes
- Report of Committee on Nominations
- Election
- Report of Committees
- Unfinished Business
- New Business

You will need your 1923 membership card for registration at Ottumwa. Have you paid your 1923 dues to your local secretary?

- MEETING PLACES
- Headquarters—Hotel Ottumwa
- General Meetings—Wapello Club
- House of Delegates—Hotel Ottumwa
- Eye and Ear Section—Ballingall Hotel, Orchard Room
- Registration and Exhibits—Wapello Club
- Headquarters for Ladies—Hotel Ottumwa

- Rules for Papers and Discussions
- "No address or paper before the Society, except those of the President, Guests, and Orators, shall occupy more than twenty minutes in its delivery; and no member shall speak longer than five minutes nor more than once on any subject." "All papers read before the Society shall be the property of the Society." (Excerpts from By-laws.)
- Each paper should be typewritten, and deposited with the Secretary when read; and if this is not done, it will not be published.
- On arising to discuss a paper, the speaker will please come forward and announce his name and address plainly.

- Registration
- Do not fail to Register.
- Please bring your membership card for presentation at Registration Desk.

- ENTERTAINMENT
- Wednesday, May 9
- Reception Committee for Visiting Ladies will be at the Wapello Club, Hotel Ottumwa and Ballingall Hotel.
- Auto ride and reception at home of a local physician with presentation of a one act playlet, Three O'clock.
- President's Reception for Physicians and Ladies, Eight O'clock P. M.
- Thursday, May 10
- Complimentary May Breakfast for Visiting Ladies, Congregational Church, Nine O'clock A. M.
- Shakespearian Pot Pourri with tableaux and music, First Methodist Church, Eight O'clock P. M.
- Smoker at Wapello Club following evening Scientific Program

- IOWA STATE MEDICAL SOCIETY OFFICERS AND COMMITTEES 1922-1923
- President.....Charles J. Saunders, Fort Dodge
- President-Elect.....Oliver J. Fay, Des Moines
- First Vice-President.....George Kessel, Cresco
- Second Vice-President.....O. F. Parish, Grinnell
- Secretary.....Tom B. Throckmorton, Des Moines
- Treasurer.....A. C. Page, Des Moines
- Editor.....David S. Fairchild, Sr., Clinton

- COUNCILORS
- Term Expires
- First District—R. S. Reimers, Ft. Madison.....1925
- Second District—D. N. Loose, Maquoketa.....1927
- Third District—A. G. Shellito, Independence, Secretary.....1926
- Fourth District—Paul E. Gardner, Chairman.....1924

Fifth District—George E. Crawford, Cedar Rapids.....	1923
Sixth District—O. F. Parish, Grinnell.....	1923
Seventh District—Channing G. Smith, Granger.....	1924
Eighth District—Samuel Bailey, Mount Ayr.....	1924
Ninth District—H. B. Jennings, Council Bluffs.....	1927
Tenth District—W. W. Beam, Rolfe.....	1926
Eleventh District—G. C. Moorehead, Ida Grove.....	1925

TRUSTEES

J. W. Cokenower, Des Moines.....	1925
W. B. Small, Waterloo.....	1924
T. E. Powers, Clarinda.....	1923

DELEGATES TO A. M. A.

Donald Macrae, Jr., Council Bluffs.....	1924
W. L. Allen, Davenport.....	1924
J. C. Rockafellow, Des Moines.....	1923

ALTERNATE DELEGATES

D. N. Loose, Maquoketa.....	1924
B. L. Eiker, Leon.....	1924
M. N. Voldeng, Woodward.....	1923

COMMITTEES

Medico-Legal

D. S. Fairchild, Sr., Clinton.....	1924
Lewis Schooler, Des Moines.....	1923
H. B. Jennings, Council Bluffs.....	1925

Scientific Work

Chas. J. Saunders.....	Fort Dodge
Tom B. Throckmorton.....	Des Moines
A. C. Page.....	Des Moines

Public Policy and Legislation

W. W. Pearson.....	Des Moines
B. L. Eiker.....	Leon
D. J. Glomset.....	Des Moines
Chas. J. Saunders.....	Fort Dodge
Tom B. Throckmorton.....	Des Moines

Constitution and By-Laws

V. L. Treynor.....	Council Bluffs
C. B. Taylor.....	Ottumwa
Tom B. Throckmorton.....	Des Moines

Publication

D. S. Fairchild, Sr.....	Clinton
W. L. Bierring.....	Des Moines
C. P. Howard.....	Iowa City

Finance

C. P. Frantz.....	Burlington
A. E. King.....	Blockton
E. C. McClure.....	Bussey

Arrangements

Chas. J. Saunders.....	Fort Dodge
Tom B. Throckmorton.....	Des Moines
A. C. Page.....	Des Moines
J. F. Herrick.....	Ottumwa
C. B. Taylor.....	Ottumwa

Medical Library

D. S. Fairchild, Sr.....	Clinton
W. L. Bierring.....	Des Moines
O. J. Fay.....	Des Moines
G. H. Hill.....	Des Moines
C. E. Holloway.....	Des Moines

Field Activities Committee

Iowa State Med. Society.....	W. L. Bierring, Chrm., Des Moines
Iowa State Med. Society.....	President-Elect O. J. Fay, Des Moines
Iowa State Medical Society.....	B. L. Eiker, Leon
Iowa State Board of Health.....	R. P. Fagan, Des Moines
State University Med. College Faculty.....	N. G. Alcock, Iowa City
State Conference of Social Work.....	James F. Edwards, Ames
Iowa Tuberculosis Ass'n.....	Mr. T. J. Edmonds, Sec'y, Des Moines
Field Director.....	F. E. Sampson, Creston
Advisory Secretary.....	Tom B. Throckmorton, Des Moines

STATE SOCIETY
IOWA MEDICAL WOMENTWENTY-SIXTH ANNUAL MEETING
OTTUMWA

Tuesday, May 8, 1923

Headquarters—Hotel Ottumwa

Morning Session
9:00 a. m.

Call to Order by the President—

EPIE McCREA, M.D., Eddyville

Invocation—

MRS. W. G. RAMSEY, Eddyville

Greeting—

MRS. D. C. BROCKMAN, President of the Women's Council of
the Ottumwa Chamber of Commerce

Appointment of Committees

Scientific Papers

(Twelve minutes will be allowed for each paper)

Tuberculosis in Children—

CLARA CRONK, M.D., Bloomfield

A Case Report—

EVA SHIVELY, M.D., Osceola

The Relation of the Community to the Woman
Physician—

MAE HABENICHT, M.D., Des Moines

Address of President—Efficiency in Medicine

Discussion of papers lead by JEANNETTE THROCKMORTON,
M.D., Des Moines, and JOSEPHINE WETMORE RUST, M.D.,
Mason City, fifteen minutes

Annual Business Meeting

12:15

Luncheon—Hotel Ottumwa (Our Society will be
entertained by the Wapello County Medical
Society)

Toast—

A. O. WILLIAMS, M.D., Ottumwa

Response—

JANE WRIGHT, M.D., Clear Lake

Afternoon Session

1:30 p. m.

Acrodynia—

MAUDE TAYLOR, M.D., Ottumwa

The Use of X-Ray in Gynecology—

MARY ELIZABETH HANKS, M.D., Chicago, forty-five minutes

The Etiology of Extra Uterine Pregnancy—

EMMA ACKERMAN, M.D., Sioux City

Prenatal Care of Iowa Mothers—

FLORENCE JOHNSTON, M.D., Iowa City

Sane Obstetrics—

EMMA JEWEL NEAL, M.D., Cedar Rapids

The Problem of the Unmarried Mother—

MARY KILLEEN, M.D., Dubuque

Discussion of papers lead by JANE WRIGHT, M.D., Clear Lake;
JENNIE CHRIST, M.D., Ames, twenty minutes

Report of Committee on President's Address

4:30 p. m.

Automobile ride arranged by the Women's Council
and the Local Committee

6:30 p. m.

Dinner at Hotel Ottumwa

Reminiscences and stories by all the members

8:00 p. m.

Dance Divertissements—

By the Pupils of Miss Mary McNett

OFFICERS

1922-1923

President.....	EPPIE MCCREA
Vice-President.....	JANE WRIGHT
Secretary.....	JULIA F. HILL
Treasurer.....	HELEN JOHNSTON

COMMITTEES

CREDENTIALS

JENNIE GHRIST	JENNIE COLEMAN
SOPHIE HINZE SCOTT	

ETHICS

MARY K. HEARD	EMMA JEWEL NEAL
MARIAN O'HARROW	

PUBLICATION

JOSEPHINE RUST	EMMA ACKERMAN
NELLE NOBLE	

FEDERATION

JEANNETTE THROCKMORTON	MAE HABENICHT
MARGARET MILLS	

ARRANGEMENTS

MAUDE TAYLOR	ZENELLA MORRIS
JANE WRIGHT	

DISTRICTS

KATE HARPEL	EDNA SEXSMITH
MARY TINLEY	ELIZABETH KENNEDY

OUR EXHIBITORS

- W. G. Cleveland and Company, Omaha and St. Louis, Booth 1.
Surgical Instruments, Orthopedic Appliances, Office and Hospital Supplies
- A. S. Aloe Company, St. Louis, Booth 2.
Surgical Instruments, Physicians Supplies, Hospital Furniture, Bacteriological Apparatus, Etc.
- Victor X-Ray Corporation, Des Moines, Booths 3 and 4.
X-Ray Equipment, Physio-therapy Apparatus
- Kolynos Company, New Haven, Booth 5.
Dental and Surgical Supplies
- Standard X-Ray Sales Corporation, Des Moines, Booths 6 and 7
Roentgen, Electro Medical Therapeutic Apparatus
- Horlick's Malted Milk, Racine, Booth 8
Horlick's Milk Products
- G. D. Searle and Company, Chicago, Booth 9
Pharmaceuticals
- Lewis X-Ray Co., Des Moines, Booth 10
The Latest in X-Ray Apparatus
- The Radium Company of Chicago and Denver, Booth 11
- E. R. Squibb and Sons, New York, Booth 12
Vaccines, Serums and Antitoxins

Radium Chemical Company of Pittsburg, Booth 12

Demonstration Use of Radium and Apparatus for Administration

Merry Optical Company, Kansas City and Des Moines, Booths 14 and 15

Optical Goods and Surgical Instruments

Magnuson X-Ray, Omaha and Des Moines, Booths 16 and 17
X-Ray Apparatus and Intensifying Screens

Hill Retreat, Des Moines
Booth 18

Geneva Optical Company, Des Moines, Booth 19
Optical Goods and Specialties

Standard Chemical Company, Des Moines, Booths 20 and 21
Surgical Instruments, Supplies, Chemicals

Riggs Optical Company, Omaha, Booths 22 and 23
Optical Goods, Surgical Instruments

THE NATIONAL MEETING AT SAN FRANCISCO

The next annual meeting of the American Medical Association will be held at San Francisco June 25 to 29. No doubt many of the Iowa physicians are contemplating a trip West with the American Medical meeting in mind. For the convenience of such physicians who are planning on a western trip, the Santa Fe road has arranged a very complete schedule, as follows:

Lv. Des Moines	11:40 p. m., Saturday,	June 16
Ar. Kansas City	7:30 a. m., Sunday,	June 17
Lv. Kansas City	11:45 a. m., Sunday,	June 17
Ar. Colorado Springs	8:00 a. m., Monday,	June 18
Lv. Colorado Springs	6:00 p. m., Monday,	June 18
Ar. Santa Fe, N. M.	9:15 a. m., Tuesday,	June 19
Lv. Santa Fe, N. M.	11:30 a. m., Tuesday,	June 19
Ar. Albuquerque	2:15 p. m., Tuesday,	June 19
Lv. Albuquerque	4:00 p. m., Tuesday,	June 19
Ar. Grand Canyon	7:00 a. m., Wednesday,	June 20
Lv. Grand Canyon	8:00 p. m., Wednesday,	June 20
Ar. Los Angeles	3:30 p. m., Thursday,	June 21

For the occasion a rate of \$77.65 has been made by the Santa Fe going via Chicago Great Western to Kansas City thence Santa Fe lines to Los Angeles then Southern Pacific or boat from Los Angeles to San Francisco, returning by any direct line through Salt Lake City and Denver. For tickets returning through Portland, Seattle and Vancouver to St. Paul, thence to Des Moines, the rate will be approximately \$18 higher. For the side trip to Colorado Springs no charge will be made, for side trip Lamy to Santa Fe, New Mexico, and return \$1 extra, for side trip Williams to the Grand Canyon and return \$9.12 extra.

For further information address this office, or write direct to Mr. C. A. Moore, General Agent, Santa Fe, 615 Flynn building, Des Moines, Iowa.

Tom B. Throckmorton, Secretary.

You will need your 1923 membership card for registration at Ottumwa. Have you paid your 1923 dues to your local secretary?

OTTUMWA IS READY FOR YOU. ARE YOU READY FOR OTTUMWA?

THE CITY OF OTTUMWA, IOWA

More than seventy-five years ago, the site of the city of Ottumwa was selected by the Sac and Fox Indians in whose language the name meant "Running Waters." The town, later, was called Louisville, then Ottumwa again. The surrounding countryside in Wapello county was thrown open to the settlers at midnight on May 1, 1843. Eight years later the village was incorporated.

Ottumwa abounds in historical interest. The graves of Chief Wapello and General Joseph M. Street, the latter the first local government agent, are at Agency, six miles east, which is on the site of, and takes its name from, the old government agency. Garrison Rock, where federal troops were quartered in the early days to protect the settlers from the Indians, is three miles below the city along the Des Moines River, and up the river about the same distance is Rock Bluff where Indian councils are said to have been held.

Ottumwa has a population of 23,003 according to the 1920 census. Four or five thousand more residents are just outside the limits and in other immediate environs. Its largest single industry is the pork and beef packing plant of John Morrell and Company. This is the home office and plant for a business which extends all over the United States, and reaches many foreign countries, with branches in all the principal cities and capitals.

Ottumwa is located in the heart of a rich coal field and draws on these resources for its industrial expansion. It is the center for corn, wheat, oats, hay and clover farmers as well as stock breeders and sheep raisers. It has one factory that makes a box car loader and dock loading machinery known the world over. Its mine drills and its general manufacture of similar articles takes the name of the city over America and abroad as do the electrical hoists, trucks, boilers, lawn mowers, sash pulleys, ax and shovel handles, cigars, candy, overalls, brick, pottery and auto tops which are manufactured here.

EDUCATION

While it is a factory town, Ottumwa has not neglected the development of the cultural side of life.

The new high school building, under course of construction at a cost of \$800,000, exclusive of site, can accommodate 1,500 pupils. It has a gymnasium 65 by 107 feet, free of bleachers and can seat at games 1,200 persons; also a swimming pool 20 by 60 feet, with bleachers in connection. The auditorium has a seating capacity of 1,500.

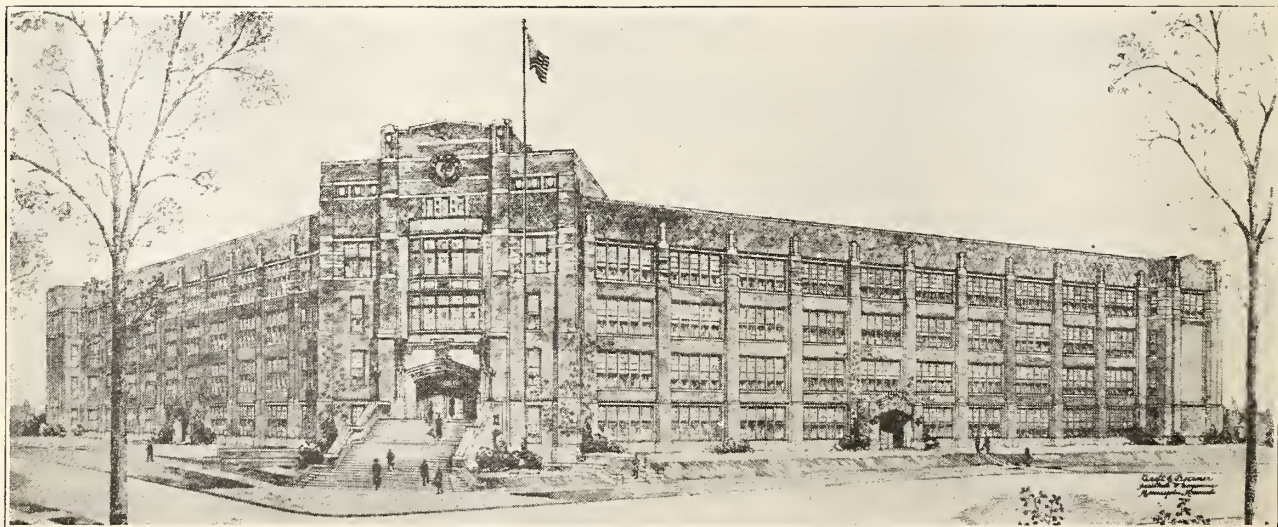
In the grade schools, there are special departments for mentally retarded children; there is also a school for the deaf where wonderful work is being done under a specially trained instructor, and down town there is maintained an efficient part-time school for young people who are necessarily employed a portion of their time. All of the leading religious denominations are represented in Ottumwa's thirty-five churches.

St. Joseph Academy, under the supervision of the Sisters of the Order of the Holy Humility of Mary, is located north of the city in a beautiful tract of several hundred acres. The main building is five stories in height and contains all accommodations for 200 or 300 boarding and day school girls.

The public library is a well appointed \$50,000 building, containing 37,000 volumes. In July of this year it will receive an endowment of \$600,000 from the estate of the late J. T. Hackworth.

A magnificent federal building, costing over half a million, houses the post office, the United States District Court, and attaches' offices, the internal revenue department, district highway engineer, post office inspector and other federal employees.

The home of the Ottumwa Courier, erected in 1921 at a cost of \$250,000 is generally conceded to be the finest of its kind in the United States for the size of the city. It represents everything of the most modern methods of newspapering. The building is an attractive style of architecture featuring the Egyptian influence.



OTTUMWA HIGH SCHOOL

All of the secret societies and fraternal orders have organizations in Ottumwa—the Masonic and Odd Fellow bodies occupying buildings of their own.

The Rotarians, Kiwanians and Lions as well as members of the Advertising Club are active in their respective organizations.

The Y. M. C. A. occupies a modern home erected two years ago at a cost of \$350,000, and the Y. W. C. A. will erect, this summer, a \$175,000 building with dormitory.

HOSPITALS

The Ottumwa hospital is a modern, well equipped institution with sixty beds; conducts a training school for nurses. A free baby clinic is also maintained, cooperating with the American Home Finding Association and the Social Service Bureau in the care of small children.

St. Joseph Hospital was opened in 1914 with thirty-five beds; also has training school for nurses. Just outside of the city is Sunnyslope Sanatorium, one of the accredited institutions of the state for the care of tubercular patients. It has a capacity for forty patients and recently a \$25,000 addition was completed at the place.

Ottumwa has a number of live, well organized functioning clubs. The Wapello Club is a business men's social club organized about twenty-five years ago. A new home, costing \$100,000 was built a little over a year ago on the site of the old quarters, modern in all its appointments.

The Elks occupy very commodious, pleasant and well equipped quarters. About a year ago they spent \$35,000 in remodeling and enlarging the interior of their club house. The American Legion has a splendid two story and basement brick building valued at \$20,000, the gift of the citizens of Ottumwa. It has lounging rooms, reading and writing rooms, a library, canteen, dining and meeting hall.

Ottumwa's Chamber of Commerce is in well appointed and conveniently located ground floor quarters, including office, tariff file room, lounge room, reading room, committee rooms, billiard rooms, dining room and kitchen. The organization has a membership of 700 and functions actively along usual lines. The Ottumwa Country Club at the north end of the city occupies forty-two acres with a nine hole golf course and fine tennis court.

TRANSPORTATION

The city is a division terminal on the main line of the Burlington; many north and south branches from the main line make Ottumwa tributary to a large territory in southern Iowa and northern Missouri. Ottumwa is on the main line of the Chicago and Kansas City and also the Cedar Rapids-Ottumwa branch of the Milwaukee. A million dollar divisional terminal is located here. The city is on the Keokuk to Des Moines branch of the Rock Island connecting at Eldon, twelve miles away, with the main line between Chicago and Kansas City. The city is the terminal for a branch line of the Wabash from Moulton.

A dozen well marked automobile trails and highways pass through the city and a tourist camping park is maintained by the Chamber of Commerce. There are five hotels in the city with beds to the combined number of nearly 500. In addition there are a dozen first class restaurants.

In the home market field John Morrell and Company's packing plant occupies 100 acres and employs 1,800 men and women. Its annual products are valued at \$50,000,000. Ottumwa is now the middle western headquarters for the Ohls Poultry Hatcheries with an output of a million chicks.

Ottumwa has many other business and manufac-



OTTUMWA HOSPITAL



ST. JOSEPH HOSPITAL

turing activities and places of interest which are not here enumerated.

The ten banks of Ottumwa have a combined capital stock of \$850,000 with a surplus of \$540,000 and deposits of \$7,676,605.49. In addition there is a trust company with a capital stock of \$110,000 and a building and loan association with an authorized capital of \$4,000,000 and carrying at the present loans in the amount of \$250,000 and capital stock issue outstanding \$520,000.

The Ottumwa Street Railway System operates seventeen cars. Nine routes radiates from the center of the city.

Municipally owned water works, costing \$280,000 supplies the city. The filtration plant has a daily capacity of 5,000,000 gallons. Water is taken from the Des Moines river and purified by coagulation, sedimentation, filtration and sterilization.

—(Courtesy Ottumwa Chamber of Commerce)

THE OTTUMWA SESSION

The Seventy-Second Annual Session of the Iowa State Medical Society will be held at Ottumwa, May 9, 10, 11, under the Presidency of Dr. Charles J. Saunders, of Fort Dodge. The program, aside from a few minor details, was arranged months ago, and it is to be hoped that in its presentation the members of the profession will be pleased with the efforts of those individuals responsible for the selection and arrangement of papers, as well as for those having to do with local affairs, which by no means, are to be minimized among the various things so essential in bringing about that crystalization which makes for success in any laudable undertaking.

In the February issue of the Journal appeared an announcement dealing largely with the selection of headquarters, the meeting places of the general and special sessions, and the guests of the Society. It will not be out of place to again call attention to the honor to be paid the Society in having as its guests,

Dr. M. L. Harris of Chicago, who will deliver the Address on Surgery; Dr. Charles F. Hoover of Cleveland, who will deliver the Address on Medicine, and Dr. H. I. Lillie, chief of the ophthalmological section of the Mayo Clinic who will deliver an address pertaining to this specialty before the General Session.

LOCAL COMMITTEE

Through the faithful and untiring efforts of the local members of the Arrangement Committee, Ex-President John F. Herrick and Charles B. Taylor, of Ottumwa, everything has been done to bring to a favorable fruition, a successful, highly entertaining and profitable meeting. Both Drs. Herrick and Taylor have been unstinted in their efforts to make everything pleasant and comfortable for the visiting physicians, their families and friends. Besides attending to details, even to an infinitesimal degree, these men secured from the local firms advertising for this Program Number. Too much credit cannot be given the local physicians who, gladly and willing, have taken upon themselves the burdens which fall to their lot in arranging for, and carrying out, the details so essential to the welfare and comfort of their visiting brethren.

SCIENTIFIC EXHIBITS

As for Scientific Exhibits, the physicians are assured of having only high class firms, with local, state and national reputations, to deal with. Space for exhibits, both for Commercial and Scientific, has been at a premium, and many firms were disappointed because of their inability to obtain space this year.

HOTEL RESERVATIONS

Owing to the somewhat limited hotel facilities, it was thought best to have a local committee attend to all reservations not cared for by the hotels. Dr. Frederick L. Nelson, is chairman of the Reservation Committee, and a request to him for reservation will be cared for promptly.

"So away dull care, let's all be gay

And come to Ottumwa in the month of May."

Tom B. Throckmorton, Secretary.



WAPELLO CLUB

OTTUMWA IS READY FOR YOU. ARE YOU READY FOR OTTUMWA?

A PROTEST FROM IOWA

By T. J. Edmonds, Executive Secretary, Iowa Tuberculosis Association, Des Moines, Iowa

In an otherwise very excellent article in "The Nation's Health" for December, Dr. E. H. Lewinski-Corwin states that the standing committee of the New York Academy of Medicine "under its present organization is the only organization of its kind in the world." He further says that "none of the medical bodies abroad or in this country maintain a sustained interest in current public health problems as they arise, or consider them from the broad view of municipal policy and in the light of accumulated thought and knowledge which comes from a continuous contact with the whole realm of public health." A writer always incurs a risk in using either superlatives or terms of exclusion. Frequently an initially correct assertion ceases to be true before it emerges into print. Admonished by the experience of Dr. Corwin I shall not claim that the Field Activities Committee of the Iowa State Medical Society is the only year-round operative department of a state medical society with a paid director established for the purpose of activating the medical profession in relation to public health work, for sustained cooperation with lay social and health agencies, and for definite planning and functioning in public health endeavors on the part of both county and state medical societies. At least, however, this development of the Iowa Society is unique and is being watched with interest by other state societies and by the American Medical Association, and various national organizations.

The personnel of the Field Activities Committee is in itself indicative of cooperation in public health work. The director, Dr. F. E. Sampson, is the founder of the Community Hospital, located at Creston, serving a group of counties; he is a prolific writer on popular as well as technical medical subjects; he is now serving his second term as president of the State Conference of Social Work. The committee members are: Doctors F. E. Sampson, director; O. J. Fay, president-elect; W. L. Bierring of Des Moines and B. L. Eiker of Leon, representing the Council of the State Medical Society; Dr. N. G. Alcock, representing the University of Iowa Medical Faculty; Dr. R. P. Fagan, representing the State Board of Health; Dr. James Edwards of the Iowa State College, representing the State Conference of Social Work; T. J. Edmonds, representing the Iowa Tuberculosis Association. Dr. Bierring is chairman and Mr. Edmonds secretary of the committee.

In the four months during which Dr. Sampson and the committee have been functioning the director has addressed meetings in fifty-one localities, has conferred locally with thirty-nine county medical societies, has secured the publication of five magazine and 150 newspaper articles relating to the work. One of the latter was a double column first page article

in the Sunday edition of the largest newspaper in the state—a perfectly legitimate means of advertising which was worth hundreds of dollars to the profession. He has motivated county medical societies in at least twenty counties in the state to active cooperation with lay public health movements—especially in support of the Christmas seal sale of the Tuberculosis Association. The good will accruing to the profession through this pledge of interest in preventive medicine and community health work has not done the practitioners any harm.—The Nation's Health, February, 1923.

PHYSIO-THERAPEUTIC WEEK IN KANSAS CITY, APRIL 16-20

The fifth annual meeting of the Western Electro-Therapeutic Association will be held in Kansas City, Missouri, Thursday and Friday, April 19 and 20, under the presidency of Dr. T. Howard Plank of Chicago. A cordial invitation is extended to the medical profession.

Preliminary program:

President's address, Dr. T. Howard Plank, Chicago.

High Frequency Currents, Dr. J. E. C. Waddington, Detroit.

The Fluoroscropy of the Gastro-Intestinal Tract, Dr. E. H. Skinner, Kansas City.

Radium and Roentgen-Ray Therapy in the Treatment of Hodgkin's Disease, Dr. H. H. Bowing, Rochester, Minnesota.

Actinic Ray Therapy in Surgical and Gynecological Work, Dr. A. Davis Willmoth, Louisville.

Demonstration Radiotherapeutic Technique, Dr. I. D. Gibson, Denver.

Iliel Stasis and Restoration of Ileocecal Incompetency (lantern slides), Dr. F. H. Morse, Boston.

Colitis; Causative Factors and Therapy, Dr. Curran Pope, Louisville.

Physiotherapy, An Adjunct to Orthopedic Surgery, Dr. J. E. M. Thomson, Lincoln, Nebraska.

Blood-Pressure Interpretation, Dr. B. B. Grover, Colorado Springs.

High Frequency Currents (with demonstration), Dr. Omar T. Cruikshank, Pittsburgh.

Radium Therapy, Dr. Sanford Withers, Denver.

The Western School of Electro-Therapy will hold its fifth annual session, under the direction of Dr. B. B. Grover and associates, Monday, Tuesday and Wednesday, April 16, 17 and 18. On Wednesday evening Dr. Pope will give a lecture on "Mendelian Heredity" (color lantern slides).

An elaborate exhibit of physiotherapeutic apparatus will be held in the lobby of the theater, and this feature alone will be worth a trip to Kansas City.

Clinics and demonstration of technique each afternoon and evening. For program address the secretary, Dr. Charles Wood Fassett, 115 East Thirty-first street, Kansas City, Missouri.

OTTUMWA HAS DONE HER PART. COME, DO YOURS

ORATION IN SURGERY*

C. E. RUTH, M.D., F.A.C.S., Des Moines

Surgery must deal so much with the end results of disease, injury and turpitude in salvaging human wreckage that at times one would become utterly discouraged but for the ray of hope in dawning prevention along many lines of surgical endeavor.

Anesthesia—Most surgeons will for years to come be likely to give ether first place as a general anesthetic because of its low immediate mortality. I am convinced however, that if equal skill and care were used in their administration, chloroform would give the lower mortality if the deaths due to ether pneumonia, bronchitis, blood damage and nephritis were honestly credited against ether. There will always remain a large percentage of bad general anesthetic risks, because of lung, renal, cardiac, haemic, vasomotor or other conditions.

Until very recently this class has been compelled to forego surgical procedures entirely or incur anesthetic risks far greater than the dangers from the needed operation itself.

Thanks to the development of local anesthesia, they can nearly all receive the needed surgical care with as great certainty of recovery as those who are considered good general anesthesia risks. One who would do heavy surgery under local anesthesia, without pain and suffering to his patients, must be willing to take a little more time and operate with greater gentleness and care.

The required greater care and gentleness is an important factor in the patient's favor, because these cases properly handled are practically never depressed by shock.

In my own experience cholecystostomy, appendectomy, ovariectomy, hysterectomy, Cesarean section, cystotomy, herniotomy, trachylorophy, perineorophy, ligation of the common carotid, excision of the mamma and axillary glands with pectoral muscles, laminectomy, thoracotomy, nephrotomy under local anesthesia were done absolutely without unpleasant accompaniment or sequellæ of any kind. The average of these cases present far less interference with the normal nutritional course of life and lose less sleep. The advantages often count heavily in the patient's favor in the prospects of recovery.

I am convinced that failure to operate under local anesthesia without pain to the patient is the fault of the operator far more frequently than to the patient's peculiarities or neurotic tendencies.

I am not advocating the abandonment of general anesthesia but believe that the present use of general anesthesia could well be reduced one-half with greater safety to the patient and a considerable increase in their comfort.

Post-operative deaths from nephritis, blood changes, heart and respiratory failures should be rare indeed.

No amount of administrative skill or selective care can hope to entirely eliminate the dangers of general anesthesia.

Localized Septic Processes—The management of septic processes manifesting themselves as furuncles, abscesses and carbuncles has been so notoriously unsatisfactory that many people in our most enlightened communities resort to the filthiest and most septic moist applications imaginable as giving results in relief from pain and promptness of recovery equal if not superior to those of the surgeon.

Ophthalmologists have for some years been familiar with the almost miraculous arrest of many corneal ulcers by the so-called, pasteurization, dry heat popularized through Prince.

Because pathogenic germs cannot survive or thrive in a temperature which normal tissues will readily endure, gives wide range to the possibilities of heat as a therapeutic agent in septic processes.

For the past eight years I have applied the method by thorough infiltration of the normal, or but slightly infected area, with a suitable local anesthetic entirely around and beneath the area to be treated. Any suitable electric or other cautery point is then used to thoroughly destroy the area which is already becoming necrotic. Slowly heat the surrounding cavity and tissues until the walls are charred, giving plenty of time for the heat to penetrate well into the tissues beyond the charred area. In dealing with carbuncles, the smaller suppurating cavities should be opened by the cautery point into the main cistern through which all should drain at the common opening. The charred tissues should be gently curetted out so nothing shall interfere with the freest drainage into the cavity.

Cases thus treated will be relieved of all pain almost at once, while redness and swelling begins to subside immediately and repair is quickly established. In the cases with a very small drainage point, plugging must be prevented by wet dressing. Cases thus treated have been terminated in one-half the usual time. Recurrences have been greatly lessened, and the relief from pain was quick, absolute and permanent.

Wounds—Wounds resulting in much loss of

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blood or severe shock, gravity or pressure autotransfusion together with the application of external heat and hot drinks still hold first place in treatment after arrest of hemorrhage. The dangers of persistent uninterrupted constriction of a limb for autotransfusion, or on account of hemorrhage, is greater than was formerly considered. The clamp compression of two sides of a limb, if adjusted with only ordinary care to compress the bleeding point, or main arterial supply, will often control hemorrhage quite as well as circular constriction; it is many times safer and can be used for very much longer periods of time.

Probing of bullet wounds of all kinds, in the primary handling is universally condemned. The use of antitetanic serum must be insisted upon in all gunshot wounds, notwithstanding the liability to the development of tetanus from the wound varies greatly with the locality and soil conditions. Street wounds of whatever class are very urgent in the demand for antitetanic serum at the earliest possible date.

X-Ray—The x-ray, properly taken, outclasses all methods combined for locating bullets in the cranium, thorax, abdomen and joints and in the treatment of the latter, rest immobilization and extension are important parts of any efficient treatment.

Gauze drains in general are mentioned only to be condemned as unreliable and often extremely dangerous. The only condition in which I consider gauze as a drain is inside a large tube as a wick and then for only twelve to twenty-four hours and it must never fill the tube tightly. During the time that drainage is indicated no condition must be allowed to obtain which shall block the drainage materials. When drainage must be free and certain, two tubes, not readily collapsable must be placed side by side. By this arrangement if the caliber of each tube become obstructed drainage will take place in the angles between the tubes.

"Debridement" in cases of extensive septic trauma I believe should be undertaken only by those whose knowledge of anatomy and whose surgical technic is of a high order.

Infection wounds must be cleansed as thoroughly as possible and drained perfectly from the remotest pocket or depths to insure against local or systemic spread of the infection.

The Carrell-Dakin method of cleansing wounds from within outward, keeping all avenues of septic exit, moist, free and open, meets the conditions best in many cases whether the Dakin, normal saline or hypertonic solutions are used. Infections sufficiently severe to threaten the in-

tegrity of the ankle or elbow, require that these joints be placed at right angles to secure greatest utility, should they be finally lost, though slight passive motion should be attempted daily to prevent bony ankylosis.

In infections of the knee, not adequately drained, through free lateral incisions, these wounds should be joined by a transverse cut, and the knee drained in complete flexion, thus exposing the entire joint cavity for thorough cleansing except the quadriceps bursa which can readily be irrigated and drained from below.

After securing entire control of such infection, the joint is closed, but full restoration of function is hardly to be expected.

Sprains—Sprains of whatever joint, require firm support and compression the same as the ankle and wrist, while the knee, spine and sacroiliac articulations require as near fixation as possible, but in none is it wise to avoid weight and pressure bearing entirely if one would secure prompt recovery.

Arthroplasty—John B. Murphy so far seems to have closed the book on arthroplasty of the great joints. But in the management of deformities of the ankle resulting in the advanced varieties of talipes varus or vulgus and instability of the ankle, from anterior poliomyelitis or other cause, stabilizing procedures often accompanied by excision of the astragalus, some displacement of the foot backward with nail or mortice fixation has made remarkably useful and satisfactory, limbs which had been previously, nearly or entirely useless.

Cavus of high degree, simple or combined with equino-varus, yields much more satisfactory results, when the entire attachment of the plantar fascia and short plantar flexors to the anterior portion of the tubercles of the os-calcis are separated from the bone, together with the periosteum of the plantar surface instead of simply sectioning the fascia in front of the attachments to the oscalsis.

To Steinler belongs the credit for developing this method of simply freeing and allowing to glide forward all restraining fascial and muscular attachments.

Of course, forcible correction of the abnormal position and complications must accompany the raising of the periosteum and fascia.

Tendon Transplantation—Greater care in the selecting and grouping of muscle action and nerve supply has resulted in great improvement following tendon transplantation. This valuable contribution to surgery was in danger of being

brought into disrepute by improper selection of tendons for transplanting.

Plano-Valgus—Plano-valgus, being almost exclusively an acquired deformity, should be prevented or cured in its early stages by wearing proper shoes, proper exercise, and manipulative correction before rigidity and pronounced disability is produced.

Cases in which an extreme degree of deformity and rigidity exists, the disability for foot work becomes almost complete and the gait is abominable. When compelled to be much on the feet, or to carry weight, these patients suffer greatly.

In advanced cases no form of exercise, foot wear or bracing is adequate. They will require forcible correction under anesthesia, and some operation on at least the neck of the astragalus, possibly sectioning of the peronei, wrenching the foot into proper position, with over correction of the displacement of the astragalus head, scaphoid and cuboid followed by cast support and continuous proper position of the foot.

Dislocations and Fractures—The greatest gain in the study of dislocations would appear to be a growing realization of the frequent association of fracture with dislocations. More universal use of the x-ray in examination and the study of these lesions should lessen the errors on this line.

No amount of care in x-ray work will ever eliminate the need for the most painstaking care in manual examination.

Syphilis has been much quoted by some as a factor in producing fragility, spontaneous fracture and delayed or non-union, but Moorhead thinks it is not a marked factor, and with this latter view I think nearly all must agree, after making an exception of tabes and paresis.

X-ray views of fractures in two directions Ashurst insists, are often insufficient for diagnosis and he advises taking the shadow-grams at many angles but always with the same focus.

Disability from fracture is due to injury to the soft parts in 80 per cent and to the bone (mal or non-union) 20 per cent (L. L. Iseman).

One-half of the 20 per cent disability from mal or non-union are permanently disabled on account of bone conditions only.

Of the 80 per cent disabled by injury to the soft parts alone, less than 20 per cent acquire the injury from the force producing the fracture. The remaining 60 per cent receive the injury causing the disability during convalescence and this is avoidable by proper management.

One hospital reports a reduction of permanent fracture disability 40 per cent and loss of time

from work 30 per cent since the installation of more modern methods for treating fractures.

Cause of non-union in sixty-four cases are given as: Comminution 6, compound 34, plating 6, late open reduction 3, undetermined 9, incomplete reduction 4, multiple fracture 1.

Surgeons should never hesitate to inform patients that no bone is anatomically perfect after fracture.

Anatomic mal union does not necessarily mean functional mal union. (M. S. Henderson.)

Function may be unimpaired when bone deformity is great. Such cases should not be operated upon or advised to have operation for correction of the deformity which is not disabling or causing distress.

A careful study of each case will reveal to the capable surgeon the best method, and the advisability of a combination of two or more methods in many fracture cases. Skin traction alone will suffice in some. Splints and casts will give the best results in others. The method or combination which will give reasonably good reduction and fixation without constriction should always be employed. Open operation should only be used when fair reduction and fixation by appliance is impossible, soft tissue had been caught between the fragments or union has failed after reasonable lapse of time. Too many with poor technic, little mechanical skill and less anatomical knowledge are trying to do bone surgery.

In compound fractures no pains should be spared to secure the most thorough sterilization possible. No compound wound is too small to drain, and none too large to leave unsutured. (Moorhead.)

Only fragments entirely loose should be removed. Enthusiastic and early probing is more dangerous than the wound. The wound in compound fractures should be enlarged sufficiently for thorough cleansing, removal of entirely loose fragments, frayed out tissues and providing of drainage (not gauze or other tamponage).

Amputation should be done in transverse comminution with the sacrifice of the main arterial or nerve supply. Amputation is indicated in infected articular fractures inadequately drained.

Fractures of the condyles of the humerus, or femur, olecranon, lower end of the radius, outer and inner malleoli, when not readily reduced and secured by ordinary dressings can, unless finely comminuted, be held in place by properly placed nails or screws without invasion of the articulation and with only sufficient skin wound to permit the passage of the fixation materials.

Fractures of the patella can often be secured by wire or hook clamps without invasion of the articular cavity. Oblique fractures of the femur immediately above the condyles, in some cases, can only be retained in good reduction by direct traction upon the condyles at the anterior lateral surfaces. This traction must not intermit for an instant, until union has been secured, though it may be reduced in amount after the muscles are well tired out in the second week.

Fractures of the neck of the femur and trochanters while requiring much work, care, patience and time, yield very satisfactory results when properly treated, and those giving unserviceable limbs should be only a very small per cent of the fractures through the narrow part of the neck in atheromatous cases well advanced in years.

Good results are at times obtained in ununited fractures of the narrow part of the neck, even as late as twelve to fifteen weeks after injury in healthy individuals by suitable nail and cast fixation.

Ununited Fractures of Narrow Part of Neck of Femur—Painless weight bearing can be secured in most ununited fractures of the narrow part of the neck by excision of the head of the femur and placing the stump of the neck, when sufficiently long, or the top of the trochanter in the acetabulum. Prolonged abduction must follow this operative procedure to secure satisfactory stability and security of the joint, though weight bearing may begin within four weeks.

Oblique fractures of the lower third of tibia may require operation, as no skin traction will suffice for extension sufficient to secure and maintain reduction.

Pins, plates, screws, wire and bands will occasionally be found serviceable in certain fractures.

While general systemic conditions at times are factors in non-union, the usual causes are local, as poor splintage, motion, detached bone, intervening tissue, injury to the vessels, nerves and infection.

Fractures of the anatomical neck of the humerus associated with dislocation is rare but at times very difficult to recognize even after repeated x-raying. It is in such cases as this that careful manual examination must supplement the x-ray findings.

Reduction will be impossible without opening into the articulation in most cases and preparation for such procedure should include a lion-jawed forcep for grasping the dislocated head through the rent in the capsule.

Unless reduction is made under the fluoroscope

in cases of fracture of the humerus and femur, especially in children, many cases of failure in reduction must occur. These cases must after reduction be retained in position by fixation in every class beyond the nearest joint on each side of the fracture, especially in children.

In fractures of the radial neck, or forward dislocation of the proximal end of the radius, reduction cannot be maintained except in full flexion at the elbow.

Oblique or comminuted long bone fractures, especially those involving joints, fractures which cannot be reduced and maintained in position by traction or splints, are often handled with good results by those doing good, safe, plate, band, wire, screw or nail fixation.

Sequestrotomy—Soft tissue flaps to fill in bone cavities after sequestrotomy should be more freely used than at present.

Brain and Skull Injuries—In head injuries, symptoms of concussion, contusion, laceration, compression, meningitis or encephalitis may so commingle and pass from one into the other that differentiation is at times impossible and in the absence of localizing symptoms becomes still more confusing.

Lumbar puncture often furnishes valuable information. Generally speaking, contusion and laceration are the more lasting in their effects. General increased intra-cranial tension may be expected to be manifested in high blood-pressure from stimulation of the vaso-motor center. Slow pulse from stimulation of vagus. Cheyne-Stokes respiration from the fluctuating level of raised arterial tension.

Site, extent and duration of the abnormal cerebral pressure will largely determine the manifestations.

The reduction of dangerous intracranial tension is at times imperative, and should be by venous-section, decompression, lumbar puncture; the latter to be undertaken with great caution, better not at all, if there is the slightest suspicion of obstruction in the iter a tertio ad quartum ventriculum.

Inflammatory sequellæ of head injuries as meningitis, abscess, encephalitis, sinusitis, require painstaking differentiation.

Non-inflammatory sequellæ as hernia cerebri, paralysis, epilepsy, insanity, psychoses, leave few creditable possibilities in their train.

Spinal Cord—Spinal cord-contusion, laceration, compression from spinal and cord injury are better operated by laminectomy as soon as the physical condition will justify in all cases that are immediately and totally paraplegic or those which

become so after injury and are not improved within one week.

Laminectomy should not materially increase the hazard in any case, and gives the only hope of relief in many cases of fracture-compression or a sharp angulation.

No drainage of the interior of the dura should be made in these cases.

The surgeon who essays to treat fractures of the spine and ignores the non-operative treatment by apparatus, traction, extension, braces, plaster, inclined plane and suspension, will miss an opportunity to relieve deformity and cure many of these cases otherwise doomed to early death or invalidism.

Bladder care is most important, should not permit of overdistension and usually should not exceed more than catheterization twice in twenty-four hours and should be so made as to eliminate the possibility of catheterization sepsis.

Abdomen—Penetrating gunshot or stab wounds of the abdomen should always be operated upon under aseptic precautions at the earliest moment possible. Hemorrhage must be controlled and perforation of viscera closed without narrowing of the lumen of the alimentary canal or ducts. Excisions and anastomosis of the intestines should be done when perforations cannot be closed without constriction.

Wounds of Liver and Kidney—Liver wounds may require packing or suture according to circumstances. In lacerations of the kidney with severe and continued hemorrhage into the bladder, tumor palpable in region of kidney with evidence of sepsis, the kidney should be reached through a lumbar incision retroperitoneally and tamponed, sutured, drained or a nephrectomy done as indicated. Many such bleeding kidneys will recover useful function after heavy laceration though with considerable replacement of kidney tissue substance by scar tissue.

Splenectomy—Splenectomy should follow severe rupture of the spleen.

Abortion—The violent sepsis resulting in prolonged illness, subinvolution or death from abortion is unnecessary if the uterus is immediately and properly freed of the secundines after loss of the foetus and before sepsis has occurred. There should be no greater danger of producing sepsis by proper surgical measures at the time of abortion than at any other gestation period. No sharp curet should be used and no curet of any kind should be used in a septic uterus.

Prolapse of the cervix, bladder and rectal wall following hysterectomy is due in most cases, to failure of the surgeon to take adequate precau-

tions in uniting the broad ligaments to each other and to the stump of the cervix or vaginal vault. Uniting these structures with any form of catgut is not sufficient to avoid a large per cent of prolapses.

Perineal repair in which the levators ani are not exposed and approximated by suture material which will last at least ten to fifteen days will fail to give adequate support and at best will furnish cosmetic gains in a skin perineum with almost no real supporting capacity.

Closure of the perineal wound by sutures of silkworm gut or other materials which penetrate the skin, is entirely unnecessary and causes a great amount of needless pain, besides inviting infection in an area not easily kept clean.

Subcuticular suture in this region answers every purpose as well and causes infinitely less discomfort. The patient is able to void in most cases from the start.

If clean work is done at the operation, infection will scarcely ever occur after proper subcuticular suture.

Movable Kidney—Movable kidney is rarely operated upon at the present time because these patients can usually be made comfortable without operation if a suitable pad and support is worn and the patient's co-operation can be secured.

Shock—Too prolonged shock with loss of vasomotor center control; vascular tone is not permanently benefited by transfusion or other medical endeavor, because the damage to nerve cells from insufficient oxygen is no longer repairable. Blood-pressure should not be allowed to fall below 80 millimeters, because injured nerve cells require a better blood supply for repair than the normal cell does for its maintenance. Blood-pressure therefore should as quickly as possible be brought as nearly as may be to 120 millimeters.

Cannon-Cattell—Tuberculosis of the male genitourinary tract has its inception in the majority of cases in the seminal vesicles. It is therefore apparent that castration, vasectomies and epidymectomies must give way to the more radical, though only rational surgical procedure of total extirpation of the seminal vesicle with the entire vas and prostate, when involved. We must deal radically with it, as we would in tuberculosis of the kidney. If done early and well the results are most encouraging. This will relegate the old plan of castration to the discard with its poor results and unnecessary mutilation.

Surgery—Whatever success the surgeon may have attained by past endeavor and loyalty to established usages he must be ever on the alert for a better, safer, simpler way. Too often we are

content that the patient has survived our endeavor in his behalf, and because he has lived, we proceed to repeat without hesitation a procedure we should be ashamed of. These self-evident truths apply to every department of the surgeon's endeavor, in diagnosis, determination of risks and their reduction to the last degree, by release of every possible handicap in suitable preparation as well as conservation of the vital forces during, and proper attention following all surgical procedures.

While every surgeon is supposed to have in his mind a clear conception of the procedure to be undertaken in each case, the man who has not the resourcefulness to adjust, to meet any and all complications, should not undertake any but the most simple surgical problems.

DIMINISHING ACCOMMODATION, ARTIFICIALLY PRODUCED*

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This paper simply consists of a few facts gathered from the literature on this subject with the addition of ideas deduced from carefully worked out tests.

The tests were begun several years ago on the suggestion of Dr. L. W. Dean. Also later, I am indebted to Dr. Lucien Howe of Buffalo for much helpful correspondence.

In the beginning, I thought that all the different cycloplegics could be tested and charts compiled, however, because of the immense amount of time required this idea was soon given up and the study has been entirely confined to atropine and homatropine combined with cocaine. In fact, to be sure that these were the drugs most commonly used a questionnaire was sent out to about 800 specialists, approximately half of whom responded. It is interesting to note that atropine and homatropine are the only two drugs used by the majority of eye men.

Some of the facts obtained I find very serviceable in every day practice and this is my excuse for presenting them. We are all interested in reports of rare cases but often we do not see such cases for months at a time. It is a rare avis, who does not at some time miss his diagnosis on the exceptional case, and still be counted a good man in the profession. But, we must not continually fail on these every day cases, which comprise the bulk of our clientele.

This paper does not contain the record of any exceptional case, rather have I chosen the common every-day cases seen in all of our offices, and which make up the majority of our refraction work, the most of the cases might be said to have normal vision for their refractive errors were very small.

The list of the tabulated results of the questionnaires shows only the first choice of the different men, for example, the cycloplegic used in children is atropine with homatropine as second choice.

Concerning miotics, of which about half of us use, I will say more later.

In the brief review of the anatomy the illustrations are mostly from Gray and Salzman, and similar ones are found in most of the text-books.

The charts are graphic illustrations of the cases tested. The abscissæ are the minutes after the application of the drug and the ordinates are points of diminished accommodation, measured in centimeters and reduced to diopters. Fifty cases have been so worked out, the graphs and results of which to save time, I have condensed as much as possible.

It is an accepted fact that in refraction work the small errors are the ones which give us the most trouble. Now it is just these cases which are apt to pass through our hands without having a thorough refraction. An exact measure of such can only be had when we are able to measure the refractive media of the eye as well as the power of accommodation.

These cases of troublesome small errors should have their eyes put in a state of which I wish to call "fixed accommodation," i. e., a state of complete paralysis of all ciliary activity, not a temporary suspension but one which is permanent for many hours such as is obtained by atropine t. i. d. for three days. As an illustration, take a case of a young adult who comes complaining of trouble on continuous use of the eyes. The cycloplegic used is homatropine, but at the trial case or in the retinoscopy room there is some doubt concerning the findings. Possibly the retinoscope shows a tendency towards a minus in one axis and a plus in the other, while at the trial case they accept only a plus. This is just the case where "fixed accommodation" should be established. If "fixed accommodation" is established these discrepancies will clear up and the proper refraction be obtained.

In the cases of reduced vision such as 20/50 or 20/200, we often routinely use atropine or otherwise establish "fixed accommodation," i. e., complete paralysis of accommodation. But is it

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needed in these cases of reduced vision? I do not feel that these cases should be so completely paralyzed, for they are usually found to be high hyperopes or myopes and with only a transient cycloplegic the refraction can be obtained, as some of these curves show. In the higher hyperopes or myopes, the difference in refraction between even a partial and a complete paralysis is only a quarter or half diopter at the most. If the case takes a four or five sphere, you do not give them the full correction anyway. So "fixed accommodation" is not as necessary in these cases, for the extra quarter or half diopter is not so important. But it is especially the cases of small refractive errors that require the state of "fixed accommodation" to be established for correct results to be

obtained. The refractionist who obtains the best results is the one who judges correctly both the state of his patient and the extent of ciliary paralysis needed.

The accepted action of atropine dropped in the conjunctiva is that of dilating the pupil and paralyzing the accommodation. In the iris the atropine cuts off the action of the fibres of the oculo motor nerve, to the circular fibres of the sphincter, while at the same time it probably stimulates the sympathetic nerve endings and so calls into action the radiating fibres and accessory dilating fibres. While atropine in the ciliary body causes relaxation of the suspensory ligament and this permits anterior bulging of the lens according to the Helmholtz theory.

SLIDES

1, 2, 3 and 4. These slides are the tabulated results of about eight hundred questionnaires, which were sent to a representative list of specialists and included some in every state. Replies were received from about half of the number. (Not shown.)

CYCLOPLEGICS			
CHILDREN		ADULTS	
Atropine	249 74.55%	Homatropine	304 90.71%
Homatropine	66 19.76%	Scopolamin	10
Scopolamin	10	Hyoscin	7
Hyoscin	8	Atropine	5
Duboisin	1	Euophthalmin	3
	334	Nothing	5
			334
MIOTIC			
No	122		
Yes	124		
Occasionally	88		
	334		

5. This slide shows the figures and per cent of the drugs used by 334 of the eye specialists.

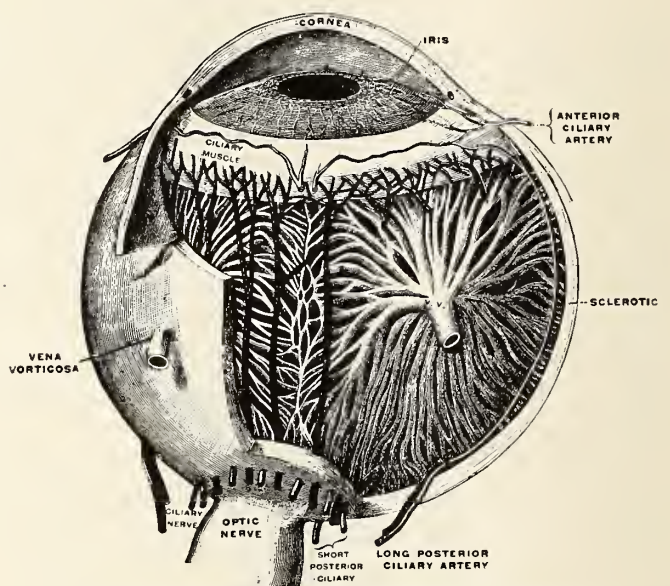


Fig. 721.—Vessels and nerves of the choroid and iris, seen from above. The sclerotic and cornea have been largely removed. (Testut.)

7. Ciliary nerves running forward to ciliary body and iris piercing the sclera around the optic nerve, a plexus is found in the ciliary muscle. (Grays Anatomy.)

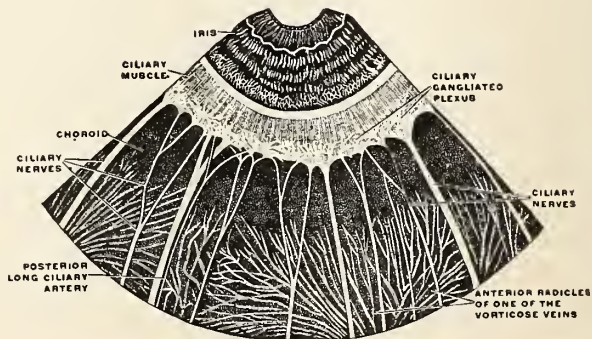
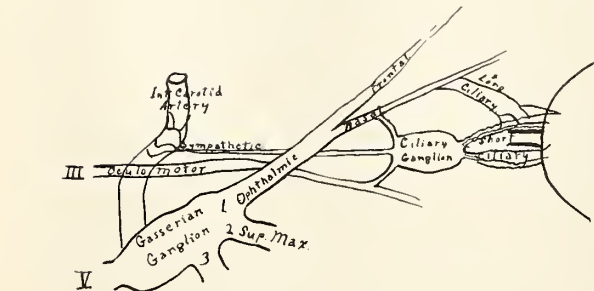


Fig. 729.—The ciliary ganglionic plexus and the ciliary nerves entering the plexus. Outer surface of the middle or vascular coat of the eyeball. (Toldt.)

8. Here we see the ciliary nerves which form the ciliary plexus, the ciliary muscle, the iris plexus. (Gray's.)



6. Schematic drawing of ciliary ganglion; its nerves of origin and distribution. The ganglion itself is about the size of a pin's head, reddish gray in color laying between the optic nerve and the external recuts. There are usually three roots which go to form the ganglion. (1) A branch from the nasal, which comes from the gasserian ganglion by way of the ophthalmic. (2) Sympathetic fibres which are derived from the carotid plexus. (3) The motor fibres are taken directly from the third or oculo motor nerve. The long ciliary nerves come directly from the nasal nerve.

The nerves from the ganglion 6-10 in number are the short ciliary nerves and pierce the sclera around the optic nerve, then pass forward inside the sclera.

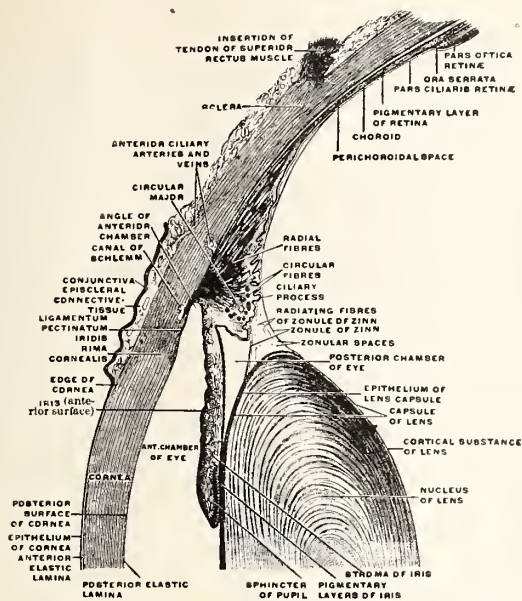


FIG. 744.—The upper half of a sagittal section through the front of the eyeball. (Toldt.)

9. Sagittal section through anterior portion of eye ball. This gives an idea of the meridional fibres of the ciliary muscle (Gray) showing ciliary process, and extent of meridional fibres back into the choroid. (Salzman.)

This is probably the basis for either the Helmholtz or Tscherning theory of accommodation. In the Helmholtz theory you must consider the scleral spur as the fixed point of origin for contraction of the ciliary muscle, especially the meridional and radial portion. In the Tscherning theory the choroid is considered as the fixed point of attachment of the ciliary muscle and when contraction occurs the zonula fibres are drawn back and put under tension.



11. Section of iris showing sphincter pupillae muscle, which is supplied by nerve fibres from the third or oculo motor. Does the sphincter of the iris act and behave synchronously with the circular fibres of the ciliary body? Sphincter pupillae is supplied by the oculo motor nerve.

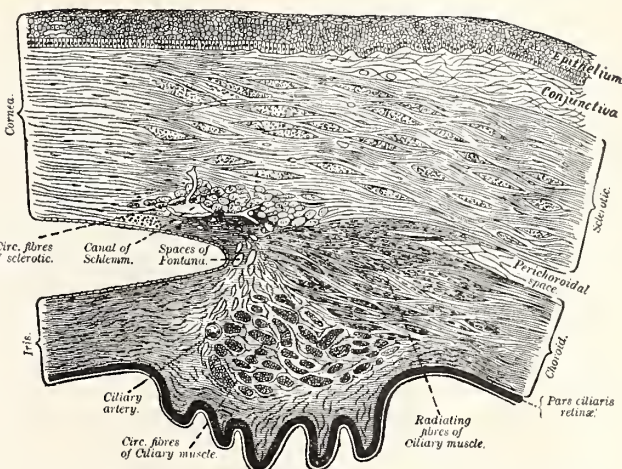
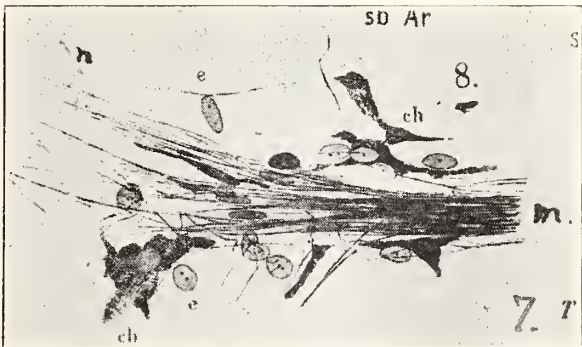


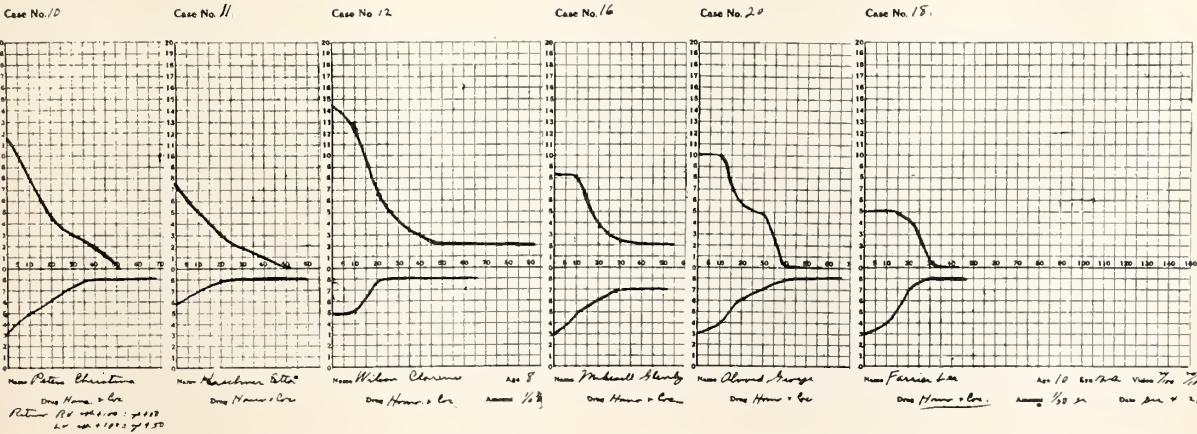
FIG. 727.—Section of the eye, showing the relations of the cornea, sclerotic, and iris, together with the Ciliary muscle and the cavernous spaces near the angle of the anterior chamber. (Waldeyer.)

10. Ciliary muscle fibres showing especially the circular. In the hyperopes the circular fibres show great development. This also brings out the radial fibres and circular fibres. (Gray.)



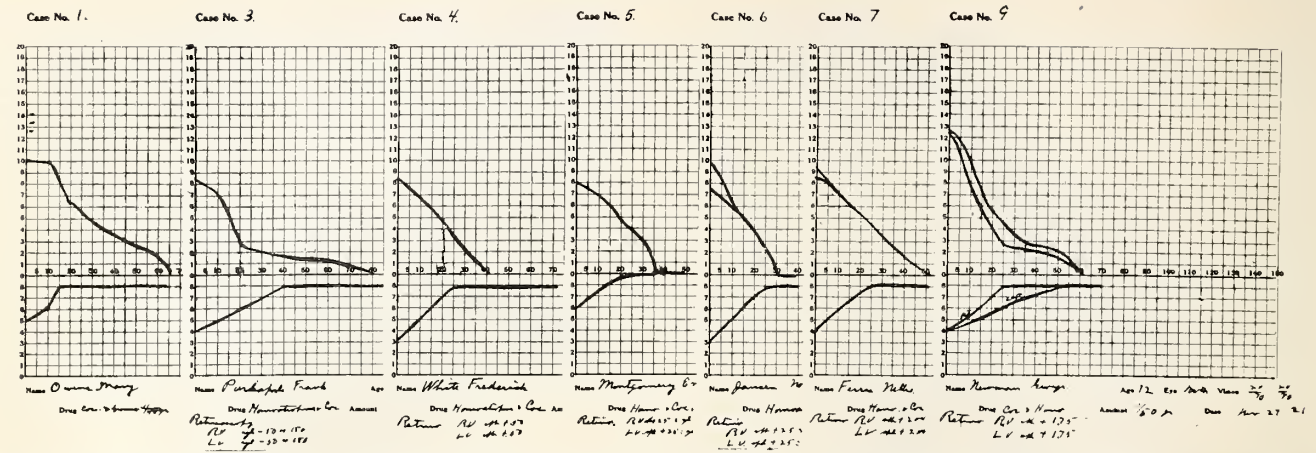
12. Plate IV No. 8 (Salzman) shows n. non-medulated nerve in smooth muscle fibre, nerve ending in or on the muscle fibre. It is at this place we find the action of the cycloplegics taking place. There is very little data concerning the exact endings of the nerve fibres in the muscle tissue. Agababow found the so-called reticular plate, which may form what some called or accept as the Myoneural junction. Also he has found motor endings in the muscle fibres in the shape of straight fibres.

If we take Atropine as the cycloplegic, we know that it has no action on the non-striated muscle fibre nor has it any effect when applied locally to a nerve. Therefore, the action of the drug must occur at the junction of the nerve and muscle, but this has not as yet been proved. The reaction is probably due to the paralyzing effect "of the apparatus whatever it may be between the para-symphatics and the structure supplied."

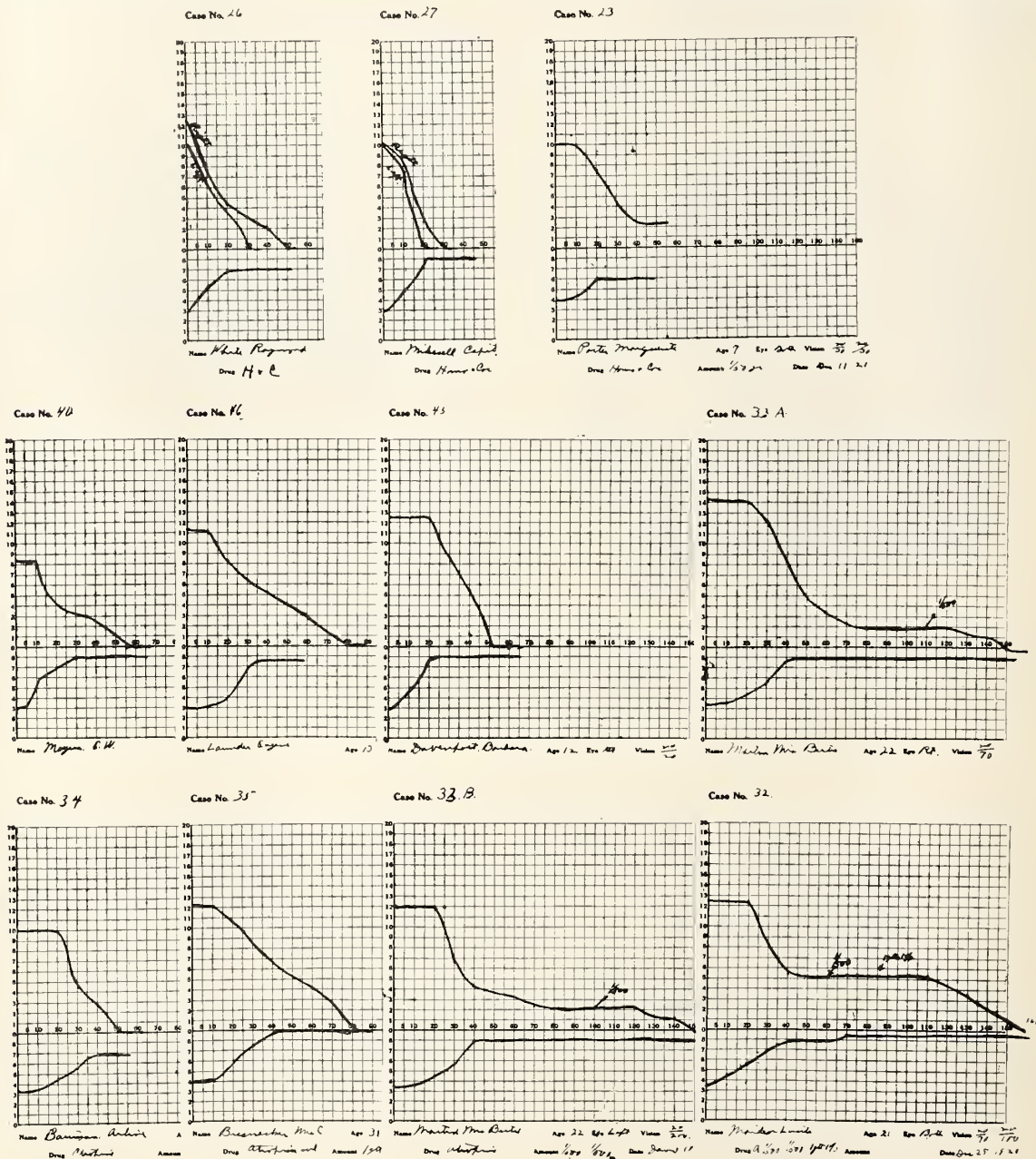


13. Graphs. Cases in which paralysis of accommodation and dilatation of pupil has occurred from the use of homatropine and cocaine discs. In making these tests it was simply the idea of using a definite amount of the drug, not the minimum or maximum amounts, but

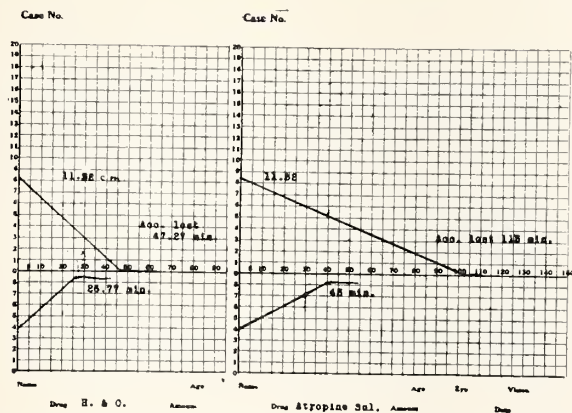
sufficient to cause a continuous loss of accommodation until complete paralysis occurred. Some of these are of both eyes, but where they varied the gradual loss of tone was averaged and the graph obtained. If there was a marked difference it was so charted.



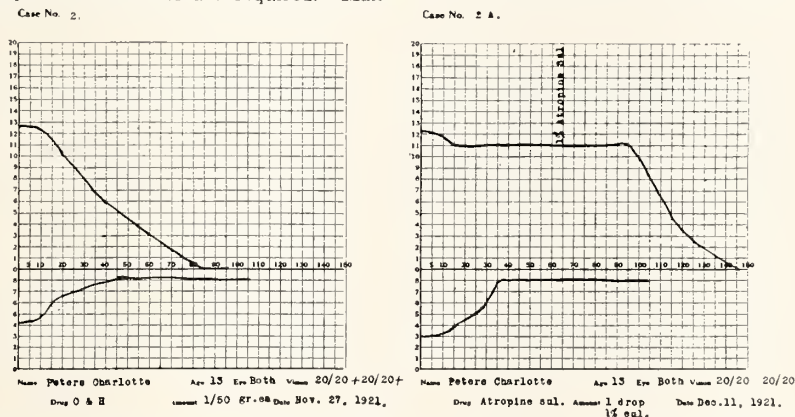
14. As in the previous charts the maximum dilatation of pupil occurs sooner than paralysis of accommodation. Homatropine and cocaine. The accommodation really begins to disappear quite rapidly after the instillation of the homatropine.



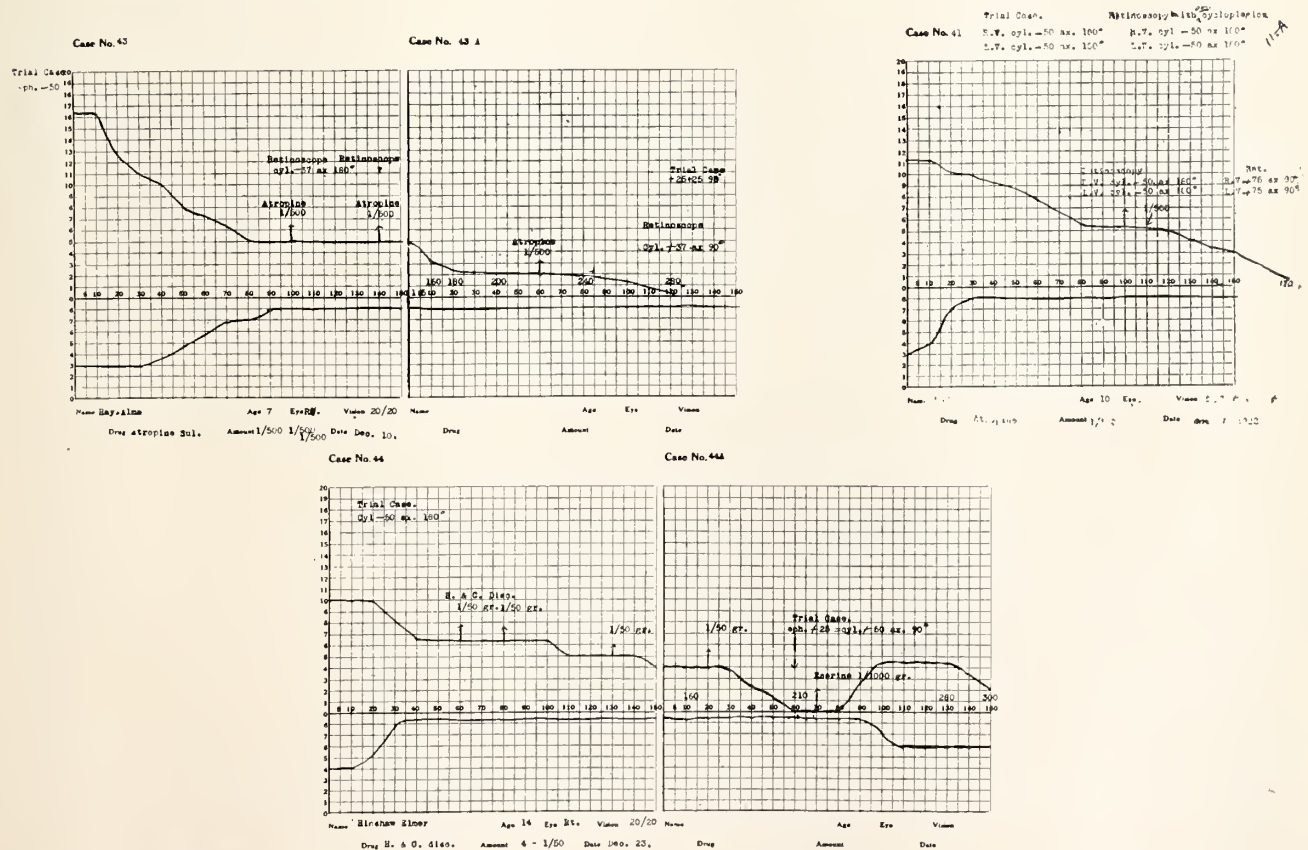
15, 15-a. Graphs after the instillation of Atropine Sulphate. The rate of accommodation lost does not vary a great deal with the quantity of drug used; more often than with homatropine is the second instillation required. Although undoubtedly, the gelatine discs of the homatropine caused the drug to remain in the conjunctival sac longer and so a gradual absorption occurred without the drug being washed out by the tears.



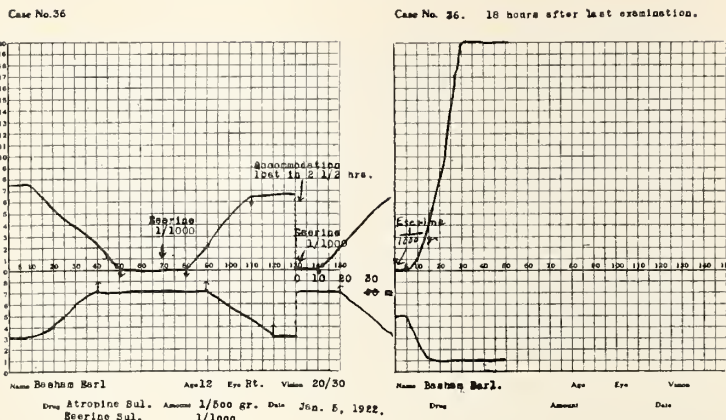
16. This is a master graph or the average of about 70 cases. The power of accommodation is lost by the use of homatropine in 47.27 min. while with atropine 113 minutes are required. Maximum dilatation of pupil with homatropine occurs in 26.77 minutes, with atropine in 43 minutes.



17. Cases in which both homatropine and atropine have been used. In some a 2 per cent homatropine solution was used and some the homatropine and cocaine discs were used. Atropine was used in both the 1/500 grain discs as well as in the one per cent solution. Of the general average of time required for the loss of accommodation, homatropine is the faster.



18, 19 and 20. These are cases of what might be ciliary spasm yet they will illustrate the fact that certain cases require "fixed accommodation" before you can correctly work out the refraction. True ciliary spasm is where the case seems to accept a minus, when a plus is actually required. Whenever the various findings do not agree then we have a case where atropine t. i. d. for three days or longer is demanded.



21. This case was chosen as being typical of many and is an average graph obtained.

The special points to be noticed are: First—Accommodation is lost in fifty minutes while maximum dilatation occurs in forty minutes.

After the instillation of eserine the power of accommodation begins to return before relaxation of the pupil occurs. Now while the one application of eserine overcomes the effect of the atropine, however, the eserine is either neutralized by the atropine or the effect of the eserine wears off and the paralyzing effect of the atropine again asserts itself. After accommodation is again paralyzed by the atropine a second instillation of eserine

will in a shorter time overcome the paralysis and again we see the ciliary muscle responds quicker than the sphincter of the iris.

There does not seem to be a definite knowledge as to time and rate of response of the iris and ciliary body, and especially whether the circular fibres act synchronously with the sphincter of the pupil.

We do know that in a myope the circular fibres are not so well developed and it is brought out in several texts that a myope tends to have larger pupils.

These cases together with several others which I have carefully checked show that the power of accommodation returns faster than contraction of the pupil.

TRANSPARENCY

“Fixed Accommodation” not as necessary in high hyperopes or high myopes.

“Fixed Accommodation” absolutely essential where the findings vary.

Miotics after cycloplegics.

Effect is transient only.

Accommodation returns more rapidly than dilatation disappears.

In the transient effect accommodation is lost faster than the miotic effect.

Whatever we can do to aid in a more understanding use of cycloplegics is a step in the right direction. When we can discriminate between those cases which require the “fixed accommodation” and those which only need a transient cycloplegic, or mydriatic, then we will come nearer to a mathematically correct refraction.

Discussion

Dr. E. P. Weih, Clinton, Iowa (opening)—This most interesting subject so excellently presented by Doctor French gives us much food for thought. He has gathered a few facts from the meager literature and has added to the subject by facts derived from carefully worked out tests. All writers seem to be in accord in the use of atropin sulphate, but there is much variance in the descriptions as to the use of homatropin. For example: Axenfeld in his last edition states that he uses homatropin one per cent two drops with a five minute interval using with it one drop of 4 per cent cocain and that after thirty minutes there is mydriosis and accommodation paralysis. de Schweinitz states that in order to use homatropin properly, it must be employed by cumulative instillations in the strength of eight to sixteen grains to the ounce, one drop of such solution being used every

fifteen minutes for an hour and a half and then waiting forty minutes, after which time the maximum effect of the drug upon the accommodation is secured. Some oculists prefer homatropin in gelatin disc form associated with cocain. I have never been able to convince myself of its superiority to a solution of the drug and regard the addition of cocain to the solution as a distinct disadvantage. We should all insist upon the necessity of a cycloplegic in determining the refraction. I consider it as necessary in middle life as in youth and employ a cycloplegic in practically all cases up to forty-eight years and sometimes after that age. To determine whether complete cycloplegia is present or not, systematic tests of the accommodation should be made before and during the instillations until the range has been reduced to below a diopter. Pre- and post-cycloplegic tests are also important, the latter especially when there is a large disagreement between the pre-cycloplegic and cycloplegic findings. Eyes with small errors of refraction are more liable to cause reflex neurosis than those with large; a small error can be compensated when the large one cannot. A cycloplegic is necessary to detect accurately small errors.

Dr. F. L. Wahrer, Marshalltown, Iowa—There are several things about refraction work that appeal, I think, to most of us. One of them is not so much from a scientific standpoint as it is from a standpoint of handling our patients. There is quite a bit of propaganda around in regard to the use of the cycloplegia. You hear all sorts of things coming from people who use their imagination, and from a certain class of optometrists who feel that anything that hurts your business will help theirs, and there are a great many people who have a prejudice against what they call dilating the eye. Now a great deal of that prejudice is very easy to work up because they

are put to a certain amount of discomfort and inconvenience by the fact that they are not able to see afterwards, and I feel that the use of eserine following the refraction is something that is worth while. It returns the muscles of accommodation faster, and the return to the normal of the eye is something worth while from a medical standpoint. But from the standpoint of our own practice it is also worth while, because it does away with a very large amount of the inconvenience which the patient dislikes so much. By the use of eserine, either in solution or by giving them a small tube of eserine ointment which they can handle better than the solution, the majority of these cases, except the atropine cases of children, can be returned to practically normal, as far as they are able to see, by the next morning. We can do the refraction in the afternoon and the next morning, the people are able to go about their business and they are not inconvenienced, and if we get the reputation of being able to let our patients off with a small amount of inconvenience, we have done a great deal towards promoting this method of refraction because there are a great many people who will not allow us to dilate the eye. And another thing about the time that it takes to get cycloplegia. I do not think any man can say it takes so long with a certain drug to get relaxed accommodation. That depends upon the eyes that are going under a cycloplegic. We can get one man that will take homatropine and will have a sufficiently good paralysis of accommodation by instilling say three discs of homatropine at fifteen minute intervals, and a man will come along the next day that it won't touch, so when a man says that a certain drug will give cycloplegia in a certain length of time, I think they are making rather a broad statement, because no two eyes are quite alike under the same circumstances. I agree with what Dr. Weih said as regarding our using cycloplegia past the ordinary age. Many people say they do not use it past thirty years of age. Cycloplegia should be used where it is necessary to get results, without reference to the age, always being sure that we are not using a cycloplegia in glaucoma.

Dr. Gordon F. Harkness, Davenport, Iowa—It seems to me that we cannot lay down any hard and fast rule, we have to analyze our patients in regard to this work. Contrary to the use of atropine as laid down in the text-books for years, that we must use it for several days in order to get complete cycloplegia. We have, for years, been using atropine satisfactorily and have been making our test a matter of two hours or two hours and a half after the instillation of atropine. We have not gone as thoroughly into the exact time to get the fixed accommodation as has Dr. French. He tells me that in over 75 per cent of cases, they have reached this fixed accommodation with one instillation of atropine. Now we have applied the use of cycloplegics in a practical way with our patients because the optometrist is in competition with us, whether we acknowledge it or

not, and we have found the use of atropine in this way, during a good many years, very satisfactory. The use of eserine afterwards, while it has a great advantage in many cases, if we analyze our patients and find out what their needs are, yet eserine has a disadvantage, it seems to me, because it overcomes the very thing we wish to avoid, and the reason for which we have been using atropine more generally than homatropine. Where we have prescribed a lens which is somewhere between our total and our manifest and we put in our eserine, then we are going to find that many of our patients are going to have trouble in getting used to their glasses, so it seems to me the general use of eserine after the cycloplegia is not to be recommended because our patient will complain of the inability to get used to their glasses, where if we simply let them come down gradually from the total effect of our atropine, they can accommodate themselves to their glasses much easier.

Dr. J. M. Patton, Omaha, Nebraska—I think most of us like to avoid these more or less technical investigations. We would like to do it, but we do not quite have the industry or ability to put it across, so when someone like Dr. French presents a subject like this, we certainly should appreciate it. I am sure I do. The discussion has been very general and I only wish to bring out and emphasize one or two little points. One of these is the importance of careful work in the low errors. I was talking with Dr. Jackson of Denver a few years ago in regard to this, and he remarked that most of us get pretty good results in high errors as Dr. French has mentioned, but in the slight errors that seem to be scarcely worth considering, we must work with the utmost care if we are to get results, and it is necessary that we have accurate knowledge of the accommodative power of the patient. Now as to the use of myotics. I think we will all agree as oculists that a mydriatic adds to our knowledge of the case. The optometrist is not going to go out of business. There are many cases that will consult the optometrist but we must be able to give our patients a little better service, a little more accurate attention than they can, so that when they come to us, we can give them value received and make them more comfortable and satisfied with the result. If we do anything less than this, we are failing in our profession. Just a word as to eserine. I cannot quite agree with the last speaker in regard to the question of eserine. Of course, in the cases mentioned, the absence of eserine or other myotic allows a gradual reduction of the accommodative paralysis and may help the patient to get used to his glasses. In the average case, I think the use of the eserine does not make any difference in this regard but it is not so much an element of convenience to the patient as it is an element of safety. It has been pointed out more than once that there are certain patients who will not stand prolonged mydriasis, and it is our custom to supply the patient with a little half dram vial with a few drops of eserine solution in it, with instructions

to drop a drop in each eye every three or four hours until the pupils come back to normal, and we feel that the results justify the effort.

Dr. Royal F. French (closing)—I want to thank all those who have discussed this paper, especially our guest Dr. Patton. He was correct when he said it does take time to work these things out. I started this four or five years ago and was quite enthusiastic over it, but guess I became lazy for I stopped until last fall, when I again took it up. Regarding the use of one or two per cent homatropine drops at five minute intervals, I believe that repeating at such short intervals is a waste of homatropine. Many of the men reported in their answer to questionnaires, that they put the drops in at five minute intervals for ten times. These men are not getting the full value from the quantity of drug used. I believe that a definite small amount should be applied as the paralysis progresses. This progressive loss of accommodation can be roughly tested by the inability to read from the ordinary reading card. The main object is to keep using the drug until full paralysis is obtained. As to whether we use a solution or a disc of the drug, it is possible that the disc holds the drug in the eye a little longer while the solution is the sooner washed out. Also, closing of the lids often forces much of it out of the conjunctival sac. One of the doctors asked about a positive means of determining complete paralysis of accommodation. This is the vital point in such work. Dr. Edward Jackson in discussing some paper, I do not now recall just where, said that undoubtedly we never get a complete paralysis. There is some inherent part of the function of accommodation, which is not paralyzed by the drugs used. This is illustrated by the report of a case for which a correction was given after the use of atropine for two weeks. The patient wore the correction for a while and on his return the use of the glasses had uncovered more hyperopia, in other words the atropine had not established a full paralysis of accommodation. This I think is the basic error in all these tests for we cannot establish full paralysis. We can obtain almost complete dilatation of the pupil, but is all the function of the ciliary muscle abolished? In regard to the use of atropine, it quite surprised me in that it took so little of the atropine to have the curve of paralysis reduced to the base line, also the atropine, no matter how it was used, worked much slower than the homatropine. As for miotics, some cases may have an idiosyncrasy for eserine and some do not require the use of a miotic. Where the patient wishes to do near work, miotics may be used, but they are going to have a little trouble in that for a short time, it will bring their distant point nearer, and an occasional patient may complain of this.

You will need your 1923 membership card for registration at Ottumwa. Have you paid your 1923 dues to your local secretary?

ABSCESS OF THE LUNG*

W. W. BOWEN, M.D., F.A.C.S., Ft. Dodge

Abscess of the lung has been considered by many of us as a rare condition to be met with only few times in a life time, if at all. Consequently it has been many times overlooked; on the contrary it is a rather common condition and will be found frequently if it is kept in mind and looked for.

Etiology—The causes of lung abscess are several:

1. A sequel to operations on the upper respiratory passages with or without general anesthesia.
2. A complication following pneumonia.
3. Foreign bodies in the bronchi.
4. Metastatic emboli from suppuration anywhere in the body.
5. Trauma, especially punctured wounds of the lungs.

The first cause, namely, operations in the upper respiratory passages stands first, causing according to Whittemore of Boston 65 per cent, and of these, some 75 per cent are caused by tonsillectomies, although any operation on the throat, or mouth, or trachea, may have abscess as a sequel, a submucous resection, an operation on the ethmoid cells or an antrum, or an operation on the trachea, and extraction of a tooth is a frequent cause.

These are inspiration abscesses, caused by inspiration of material from the field of operation into the lung and consequent abscess. A general anesthetic is a very potent adjunct, inasmuch as blood and infected material enters the bronchi of which the patient is unaware, and the bronchi are anesthetized so they are not thrown out but remain to develop abscesses, not uncommonly lung abscesses develop from operations where no anesthetics are used.

These inspiration abscesses are located most frequently in the upper portions of the lungs although they may occur anywhere, and in the main are of two types.

The first type of inspiration abscess is associated with ordinary pus bacilli, these commence within a few days after the operation; the second type are associated with anaerobic organisms and begin in thirteen to fourteen days after the operation. The infected material is inspired into a bronchus and the blood plugs the bronchus completely thus making a fine place for the anaerobe to develop, and their incubation period is about

*Read before the Mid-summer Session of the Austin Flint-Cedar Valley Medical Association, New Hampton, Iowa, July 11 and 12, 1922.

thirteen days. An abscess is then developed which abscess is prone to induce sloughing of lung tissue and gangrene of the lung.

Those abscesses following pneumonia usually come after a bronchopneumonia, but sometimes they follow lobar as well.

An ordinary case of pneumonia pursues the ordinary course, but does not fully recover. The temperature may or may not reach normal, but it comes up again and runs along generally rather low, from 100 to 102, but in some cases it follows a septic course and then runs high and low in quick succession. There may or may not be chills. The patient usually feels badly and weak and loses weight instead of gaining, and runs along this way for some weeks. He has pain in the chest and coughs a great deal, if the abscess breaks into a bronchus, the sputum has a foul smell. All cases of abscess, however, do not develop a foul smelling sputum, sometimes it has a sweetish smell or no particular smell at all. Cases due to anaerobic bacteria have a sputum foul almost beyond belief.

Foreign bodies in the bronchi if of putrefactive material produce abscess very soon, but if the material is non-putrefactive such as metal or glass, it may lie there a long time and not produce abscess at all.

Metabolic Emboli—This includes pulmonary thrombi and infarct, are likely to develop from suppuration anywhere in the body, and when they do, they often lead to errors in diagnosis; and may be called pulmonary tuberculosis.

Symptomatology—The symptoms vary much, but there are certain things that require separate study. They are fever, cough, sputum, weakness, chills, sweats and soreness.

A patient that has had an operation in the throat, nose or mouth and develops fever after a few days or after thirteen days should be watched for abscess; or one that does not recover after a pneumonia properly, or is known to have a suppurating process, or has had an injury to the lung should always bring the vision of pulmonary abscess before us.

The fever may be preceded by a distinct chill or chilly sensations or not. The fever may be high and variable or low and more or less continuous; in most cases it will be the latter, and if it continues a long time may suggest tuberculosis.

A cough is developed and may continue a long time, and if the abscess discharges into a bronchus there will be profuse sputum, sometimes odorless or of a sweetish smell, but usually of a very foul odor, and if the invading organism is an anaerobe, it will be foul almost beyond belief. The sputum

is purulent, at times very profuse and again for hours there may be little or none, because at certain times the abscess will empty itself, this makes the coughing spasmodic. Many patients will say that if they lie in certain positions, the discharge of sputum is profuse, and coughing very severe. This is because in that position, the abscess empties itself by gravity into a bronchus.

The patient becomes weak, emaciated, anemic, loses his appetite, and often has night sweats and a soreness in the chest in the vicinity of the abscess, and presents a picture very like tuberculosis.

The physical examination is often unsatisfactory. To palpation there will be little or nothing suggestive, though there may be an increase in vocal fremitus over the affected area. There may also be an area of dullness if the abscess is located near the periphery of the lung, but often they are deep in the lung and can not be found by percussion or other sign. Auscultation may give moist or bubbling rales, an absence of breath sounds or nothing at all.

The most important aid to diagnosis is the x-ray, not only does it lead to a diagnosis in most cases, but it also locates the abscess.

To the fluoroscope, there is an area of dullness where the abscess is located, and in some cases where air is in the abscess a bubble may be seen. There is also lessened mobility on the affected side which can be seen, and there is absence of other signs of tuberculosis, for instance both apices may be clear, or clear up on coughing, which is not the case in tuberculosis. Then the position and size of the heart may be suggestive, it being small and vertical in most cases of tuberculosis.

But of more importance still is the plate. The plates especially if they are stereoscopic, locate the abscess and define it distinctly, and differentiate it from empyema and from tubercular conditions. The abscess will be shown as simply a pneumonic-looking area if the plates are made early, but later there may be a denser area where the abscess is located, and if it is partly empty, there may be a fluid level and a bubble of air above it. The apices will be most likely clear, and no rays leading into or toward them—no Dunham's fan. The abscess will have clear spaces above, below and may be all around it, depending upon the size and location. The shadows of an empyema are practically always low and reach to the diaphragm and are large; the shadows of the abscess are where the abscess is located and rarely reach as low as the diaphragm and are in the main smaller than empyemic shad-

ows. Empyemic shadows too are densest in their lower portions and at the periphery of the chest, while abscess shadows are generally densest in their middle which is mostly some distance from the chest wall. Where the abscess is empty or partly empty, the densest portions will be at the periphery of the abscess so an anular shadow will be shown, and in rare instances a fluid level with an air bubble above it will be seen.

Location of the Abscess—Most of the inspiration abscesses are in the upper lobes, though they can be anywhere. The pneumonic abscesses are where the pneumonia was as a rule and are therefore more in the lower lobes, but sometimes an abscess will appear in some other portion of the lung or even in the opposite lung. These are either inspiration abscesses from inspiring the coughed up sputum or else abscesses from septic emboli.

Probably a majority of abscesses are located near the periphery of the lung, but many are deep in the lung and far from the periphery. Such ones tend to break early into a bronchus because they are where bronchi are large and numerous, but one located anywhere may break into a bronchus. One would think that those located at the periphery would break into the pleural cavity and so complicate the condition with an empyema. That does occur sometimes, but generally nature guards against that by adhering the visceral pleura to the chest wall.

Diagnosis—The diagnosis depends upon: (1) the history; (2) physical examination; (3) x-ray examination.

What is to be expected from each of these has already been discussed. Abscess is to be differentiated from tuberculosis, empyema, and from an unresolved pneumonia. There are two conditions that are difficult of differentiation; they are unresolved pneumonia, and interlobular empyema. Some doubt the existence of an unresolved pneumonia. I have never seen and studied a case by x-ray. I had such a case some fifteen years ago, that I thought was an unresolved pneumonia, but now I believe that it was an abscess, and could have been diagnosed by the use of the x-ray. The x-ray is of assistance in differentiating between abscess and an interlobular empyema by determining the location, the size and shape of the shadows, both the plates and fluoroscope are indispensable.

The most useful and simple way to diagnose empyema is the needle, but if on going through the chest wall one does not find fluid, and the x-ray suggests an abscess, it is unwise to puncture the lung in an attempt to find an abscess. If

fortunate enough to strike a point where the lung is adherent to the chest wall, no damage can be done, but if you pass through the pleura where there are no adhesions and strike the abscess, you are pretty certain to infect the pleural cavity.

Complications—Aside from the complications that attend a septic process, there are a few complications that are peculiar to lung abscess. Bronchial fistula is the commonest. This is nature's method of cure, and in a few instances does cure, but again it is a complication that is exceedingly difficult to deal with if it does not lead to spontaneous cure. Empyema from the discharge of the abscess into the pleura spontaneously or from infecting the pleura with an exploratory needle is serious complication. A bronchocutaneous fistula resulting from draining an abscess that already has opened into a bronchus is a common complication. These generally heal spontaneously, but now and then there is one that is permanent. The permanency is due to one of two things; either there is a ring of dense fibrous tissue which forms about the fistula at the chest wall which will not collapse or permit of granulations closing it, or from long suppuration the fistulous track becomes lined with epithelium. Either of these require operation for their closure. The fistulous track must be dissected out, the scar tissue removed and the fistula closed with sutures, but they have a persistent habit of recurring.

Treatment—There is no particular medical treatment that has much to offer. Patients with abscess of the lung should be treated about as tuberculosis patients are treated; fresh air, sunshine, proper food, in a word hygiene. Expectorants, cough mixtures, etc., give no benefit. If there is a continued fever, continued rest in bed as for a tuberculosis patient.

Postural treatment offers much. That is, place the patient in such position as favors the drainage of the abscess. Put him on his side opposite the abscess so the abscess will drain into the bronchi. If it is in the apex, put him in an inclined position, or if it is in the lower lobe, the foot of the bed may be lowered. The trouble in applying postural treatment is that as the abscess empties, the patient coughs and expectorates profusely, and he is inclined to seek some other position than that required, and it is difficult to get him to stay in that position. But undoubtedly the constant drainage of the abscess by position tends to fill in the cavity by cicatrization.

The surgical treatment is simply to open the abscess, but this is often not easy.

There are two methods of operating, the one stage operation and the two stage operation.

After the abscess has been carefully located by x-ray, and the plates show a decided dense shadow, not merely a pneumonic looking area, a rib should be resected directly over it about four or five inches. If the pleura is found adherent to the lung, the abscess can be opened at once with a blunt instrument or a finger. If it is not adherent, the parietal should be sutured to the visceral pleura or gauze packed about the wound between the two layers of pleura so that adhesions will form between the two layers, and left for several days, then at a second operation, the abscess can be opened without anesthetic, and a drainage tube introduced. If the abscess is large and well filled, it is easy to find, if it is small or if it is empty at the time of operation, it will be very difficult to find. Sometimes a gust of very offensive air will escape, if that occurs, the abscess has been opened and a drainage tube should be inserted.

Under medical treatment there will be a number of recoveries, according to most authorities, about 10 per cent but some claim as high as 30 per cent of recoveries under medical treatment; under surgical treatment the percentage is higher, at least 65 per cent and according to some enthusiasts 90 per cent.

There are but a few things that should be kept in mind, they are:

1. Abscess of the lung is quite common.
2. That it is often called something else, as tuberculosis.
3. That it is a serious condition and has a high death rate.
4. That operated, most cases recover.
5. The operation should be one stage or two stage according to the conditions found.

THE SAN FRANCISCO SESSION

For the American Medical Association meeting at San Francisco the Santa Fe will operate a special train for members and their families, their announcement appearing in this issue. This train will leave Kansas City over the Santa Fe June 17, cars will leave Des Moines over the Chicago Great Western Railway, evening of June 16th, and will be handled through on this special. Details can be obtained from C. A. Moore, general agent of the Santa Fe 615 Flynn building, Des Moines, Iowa.

(See advertising page xxi)

BACTERIAL RELATIONSHIP TO STONE FORMATION*

O. C. MORRISON, M.S., M.D., Carroll

The geologist interprets the secrets of nature's hidden past from his observations of the quarries. He goes back 500,000 years and, step by step, unfolds the thrilling secrets of prehistoric ages. He marks upon his sketch the places where thousands of years ago great forests stood, and tells us the charming story of a great glacier that buried the carbons of nature's proudest kingdom that once stood erect in her leafy robe of beauty, and now nature has this buried deep beneath the surface of our great land in the rich anthracite coal regions, for the use of man. He tells us the story that thrills us more than can any pirate tale of where the gold and silver is buried and where nature's breast is studded with her most precious diamonds. Then he tells us of a monster age, when the air was filled with great birds, when great animals abounded, and he reconstructs Mastodons, Dinoceras and great reptiles whose anatomic remnants and footprints have been found deep in the rocks, and man's soul is deeply stirred by this story of a wonderful past.

No less interesting is the story of the archaeologist, of the early history of man's activity and his records upon cylinders and slabs of stone of what happened in the dim beginnings in the valleys of the Euphrates, Nile and upper Amazon, among the Incas Indians, who developed and used cocaine so many years ago that time has lost all definite records. From the hieroglyphics, scholars are astounded to learn how intelligent was the race even in the early dawn of history. They tilled the soil, they covered the seas and rivers with commerce, they traveled over splendid highways and have left in the great stone edifices of their day, imperishable revelations of their great knowledge. Man possesses an instinctive desire to portray in stone, the dictates of his soul's intelligence and these remain that succeeding generations may read in them of the wonderful learning of the past, and would be stirred to greater effort and inspired to "build more stately mansions," which phrase should be the watchword of all generations. The shifting sands of time have covered many of the efforts of early years, but the Pharaohs' work has stood out against time and will so stand as long as time shall last as an everlasting reminder that they were determined to destroy the chosen people.

It is enough that at one glance we gather the

*Presented before the Missouri Valley Medical Association, Kansas City.

knowledge of the past and read their ideals from the carving in the stones and say with the archaeologist of old, truly the intelligence of a people, is written deeply and plainly upon the stones of time. When thousands of years shall have lapsed and a civilization yet unborn shall walk the surface of the earth and build along her streams, they may have lost the name of Theodore Roosevelt and the Gatun locks and the Panama Canal, but they will be greatly stimulated by the wonderful intelligence of our day and, perchance, it will give them new hope to build for a better civilization for the people among whom they shall live.

We gather the information that since the beginning three great divisions have been recognized, the mineral, the plant and the animal kingdom. It may be possible that our age is first to show the steps by which the great cycle of syntheses builds the minerals into plants and these over into animal structures. If these shall live over countless millions of years, there must be some power to return the animal tissue back to a usable form, from which the cycle could be continuous.

When we first saw the little bodies called bacteria, our research work was greatly lessened. We learned that our cycle begins in the soil. Bacteria break up the rock and build a composition peculiar to its own catalytic power. Many saprophytic forms are at work, and after countless eons of years, a soil is builded. Plants take up the cycle and build nobly, that man may be an Alex Selkirk, monarch of all he surveys. His body profits by the chlorophyl of the corn and wheat and the bacterial action upon limestone for lime salts, and bacteria again disintegrates this tissue in the cycle finally to perpetuate the great plan of our Creator.

I have made use of this picture to show you that bacteria are the stone workers for man. They unite the free elements of the air with the carbonates, sulphates, etc., and combine the free element nitrogen to form proteids by the aid of plants. Without bacteria, the stone age would reign supreme, and man would perish from the earth.

I wonder if you will bear with me a moment while we study the work of these wonderful builders and see if they can possibly be so studied that their analytic building process and structures of thousands of years ago may be known and we may profit and feel that even these little bodies are wonderful, and if we know the process well, it will help us build a greater race and give us a nobler purpose to strive honestly that not a man shall perish who might be saved through knowl-

edge of their power and their relation to medicine.

Over two hundred years ago, Linneaus lived and was a student of the biological laws of the mollusk. He specialized in the biological chemistry of pearls and their formation. He had been a pupil of the early Chinese, who kept secret their knowledge of the biological chemistry of pearls. The knowledge of the life habits of oysters gave a wonderful stimulus to the industry. Commerce asked our government to aid in enlarging the oyster beds and to help spread them from Maine to Florida, and if this were accomplished, they could see no reason why beds could not be started in the Pacific. The government transplanted a shipload, so we are told, but they all perished. They could neither form shells nor survive. Again it was tried, but this time they moved the mud bed with the oysters and found it did well anywhere in the waters of the Pacific. The biologist learned quickly that this so-called bed was alive with bacteria, which are essential to the oyster, to its shell and to its metabolism, as was life itself. The oyster must have its stone worker to help manufacture and prepare the many salts essential to its structure.

In 1898, a Japanese, Mikinato, with Mitsukuri, a collaborator, began the study of the biological chemistry of pearls for the purpose of constructing a shell free pearl that would have a perfect contour. After a careful search of the literature, he started his work. He used a nucleus of mother-of-pearl, or nacre. The nucleus was laid on the outer shells secreting epidermis near the edge of the mantle. He dissected up the thin lining and covered the nucleus with the membrane, closing it in carefully by tying the neck of the sac. In a few days this nucleus was transplanted to a second oyster by making a stab wound and carefully transferring the new nucleus to the bottom of the wound and then using an astringent on the wound. They were left here for months until a layer of desired thickness was made of pearl upon the nucleus. In doing the work, he was as careful as possible with his technique and was greatly surprised to find that some of the pearls grew with much greater rapidity and that the colors varied. He set out to learn the reason and found that certain bacteria caused the pearls to grow faster and that certain others would change the color. He knew of the chromogenic or coloring ability of certain groups of bacteria, that some would give a carmine red, some a delicate pink, some a rich purple, and some a bright orange or delicate yellow. So speculation began and is still in progress. Some of the workers, who were of a more speculative frame of mind,

began to use a needle and deposit a nucleus of foreign material and with it the fancied color-producing bacteria into the oyster's body to secure a pearl of the desired size and color. The field is interesting to any biological chemist, and from these facts the physicans were attracted and experiments started in artificial production of stones in the gall-bladders of animals.

The etiology of stones in the gall-bladder has engaged the attention of physicans from the time of Galen, Morgagni, Meckl von Hemsbach, etc., all of whom thought that some irritant was responsible for the formation of gall-stones. Naunyn, Gilbert and Mignot, about the time of the pearl experiments, began with experiments in the gall-bladders of animals. Welch isolated the colon bacillus, staphylococcus pyogenes, bacillus typhosis, or some other form of infection from every gall-bladder containing stones, and found no stones where there was no infection.

In 1898, Mignot published in the British Medical Journal, these observations:

1. Foreign bodies when introduced into the gall-bladder, can stay there for an indefinite time, provided they are aseptic, without causing inflammation or precipitating the solids from the bile.

2. Foreign bodies previously impregnated with virulent microorganisms cause a more or less intense cholecystitis and precipitate the solids from the bile. As long as the bacteria retain their virulence, however, they cannot form a calculus, but only a sediment mixed with pus. This sediment has no tendency to cohere or adhere to foreign bodies.

3. The bacteria must be attenuated, not virulent. This status is best obtained by growing them for some months in bile, to which constantly decreasing amounts of broth are added. When sufficiently attenuated, they are no longer pathogenic when injected into the cellular tissues of animals. But by injecting these into infected gall-bladders, stones are formed. If a nucleus is present, the deposit is quickly manifest and stones rapidly develop.

If sterile balls or pearl were deposited in a normal gall-bladder, no growth of stone or deposit would be found. But if pearls, plus attenuated bacteria, are put into a normal gall-bladder, it would cause stones to form rapidly, within a few weeks, and the stones would form more slowly if no nucleus were provided. We readily see that the virulent infection precipitating amorphous deposits, and attenuated infection would rapidly form many stones. Stones appear in the gall-bladder during the third and fourth decades most. During this period we have most appendicitis and focal infections. Taken with the selective action of certain bacteria for mucus surfaces,

we see that the period between the initial cholecystitis and the formation of stones is a period that fits logically in the cycle. The bacteriologist has long known that certain bacteria select certain body tissues, because it has enzymes that can split this tissue, that its food is more easily obtained. Tetanus, bacillus tuberculosis, bacillus typhosis, etc., are good examples. When these virulent strains have spent their energies and many of them have become attenuated by time, it seems that the etiology should not be outside the grasp of the knowledge of man since many of the bacteriologists take these bacteria and prove it, as has been done by Rosenow and many collaborators.

The stones found in the pancreatic ducts have a similar etiology, but the work has progressed more slowly, due to the character of the gland and its position.

Stones in the kidney, bladder and ureters have been those most recently studied. Dr. Braasch started the research for kidney stones many months ago. His department has furnished much interesting data. Dogs were selected upon which the experiments were to be tried. Attenuated forms of certain strains of streptococcus were used. These were taken from kidneys that had been previously infected and that had stones present. Dogs were selected whose kidneys showed perfectly normal urine and were negative to stones by x-ray. Control dogs were used to check the work. The bacteria were introduced into the general circulation by means of a syringe. The experiments were conducted similarly to those described in the gall-bladder, with similar results. We know that there are many more varieties of inorganic salts in the urine than in the bile and would expect a greater variety of stones. Stones in the bladder and ureters are similarly formed, as are stones in the ducts of the liver.

The knowledge of stone formation will modify our therapy materially for the future. Gall-bladders having stones in their lumens will be removed as a routine by all of our profession and every attempt made to clear up all foci of infection to prevent it from being disseminated. If the gall-bladder has stones which are removed and the gall-bladder left in, then we should expect stones to reform in due time as a routine. When we find stones in the kidney pelvis or in the urinary tract anywhere, we are very solicitous about finding where they were formed so that we may thoroughly eradicate that area of infection, if possible, to prevent more stones from forming. We appreciate the significance of the bacteria's place as a stone disintegrator and

builder, and accord him first rank among structural workers in this field.

Our present knowledge causes us to work with greater care and precision in every case of stones. Our minds wander back to the knowledge of the past that wisdom may be ours for the present.

The scholars of yesterday gathered in the libraries of Pekin, Alexandria and Louvain for the books that perished in the flames of a conquering hero. Today that scientist is the greatest scholar, who can read the secrets from an unseen world and know what happened from the beginning, and use it for the betterment of his fellow men.

POINTS IN DIAGNOSIS OF CHRONIC GALL-BLADDER DISEASE

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Complaints of vague gastrointestinal disturbance, indigestion, flatulence and heartburn, accompanied by lack of energy and lassitude, without definite pain or marked tenderness anywhere in the abdomen, are among the most common to which the physician has to listen. This type of case history is particularly noticeable for its lack of uniformity, its failure to adhere to any textbook type, and its general vagueness. It may include in addition to the features enumerated, mention of frequent headaches, constipation, unhealthy color, anorexia, nausea, muscle or joint pains, and myriad other types of minor distress. As a rule, no one of the symptoms is very severe, but, taken together, they suffice to reduce health and efficiency well below par. There is no doubt that a very large percentage of such histories depends upon chronic gall-bladder disease, usually infection, with or without gall-stones. Diagnosis of this condition, where it fails to make itself evident by such unmistakable localizing signs as biliary colic, exacerbation of acute cholecystitis or frank jaundice, is however not always easy or conclusive, since there exists no single laboratory test, no pathognomonic sign, and no cleancut typical history which will clinch it. In these cases, the diagnosis must usually be made by obtaining and weighing all the available evidence tending to incriminate the gall-bladder, and by excluding all other conditions capable of causing a similar symptomatology by elimination.

Etiology—From the etiological standpoint, gall-bladder disease of this type depends upon biliary stasis, which in turn predisposes to infection and to stone formation. Stasis of bile in the gall-bladder may be favored by irregular habits of

eating, by relaxation of the abdominal wall, by sedentary habits, by visceroptosis and its accompanying constipation and probably by obesity and over-eating. Infection may come through the blood stream, from diseased teeth or tonsils (usually streptococcus), from the gastro-intestinal tract as in typhoid and probably colon bacillus infections, and possibly as an ascending infection through the bile ducts from the duodenum. Infection may sometimes precede stasis, as in a typhoid cholecystitis, which often does not give trouble till years after the original attack of fever. In that case the organisms, are apparently harmless until stasis or some other factor lowers local resistance. So it would seem that the primary difficulty is usually stasis rather than infection, and that infection, sufficient to cause clinical symptoms, is difficult or unlikely unless stasis exists first.

The well recognized relationship of chronic appendicitis to chronic gall-bladder disease exists on the basis of transference of infection, though the exact mechanism of this transference is conjectural. It is probably through the blood stream and seems to be usually from the appendix to the gall-bladder. The existence of foci of infection is almost as important an etiological factor in gall-bladder disease as it is in chronic arthritis, while on the other hand, the infected gall-bladder may act as a focus and cause joint and muscle pains.

History—The history will in all likelihood stress the existence of gas in the stomach and of a sense of fullness or heaviness after eating. The question as to whether food as a rule relieves the discomfort will bring emphatic denial. On the other hand the occurrence of distress in the upper abdomen does not have the prompt and constant relationship to food taking and to the quantity of food which it has in some intrinsic gastric conditions. Heart burn is very frequently a prominent symptom. Moderate nausea, seldom followed by vomiting, is another frequent complaint. Lack of energy and vim and the almost constant presence of a tired worn out feeling are quite usual symptoms arising undoubtedly from toxemia. As previously indicated a history of attacks of tonsillitis and dental abscess may give an etiological clue but it is necessary to be on one's guard that the whole disturbance is not attributed to these factors alone thus turning attention away from the gall-bladder. Similarly the history of joint and muscle pains of a rheumatic character should not divert the examiner's attention from the gastro-intestinal features of the case. Often times an inquiry as to jaundice will bring a reply that while there has been no definite jaundice, the

skin has assumed a muddy unhealthy color, a change which is more apt to have been noticed by the patient's associates than by himself. Inquiries as to diet may disclose habits of excessive eating; frequently irregular eating with relatively long periods of fasting, followed by the bolting of excessive amounts of rich food, and quite characteristic statements to the effect that greasy or fried foods invariably cause trouble.

Physical Findings—The physical findings directly associated with this type of gall-bladder disease are relatively few and indefinite. In type, the individual is most apt to be a female between thirty and fifty, and over the normal weight. It should be borne in mind, however, that this condition not infrequently exists both before and after the ages given, in men as well as in women, and in individuals who are below rather than above the average in weight. More usually than not these patients are of the enteroptotic habitus, and where this type of physique does not obtain there is apt to be marked relaxation of the abdominal wall from acquired causes such as child-bearing, bad posture, and lack of exercise. Of physical signs probably the most constant is an increase in the tonus of the muscles in the right upper quadrant of the abdominal wall. This may be described as a guarding against the examiner's fingers rather than as a rigidity. Firm deep pressure below the costal arch will usually elicit tenderness. The liver border is often palpable below the arch. The sclerae of the eyes are quite apt to be slightly yellowed. As previously suggested the tonsils upon inspection and the teeth upon x-ray examination may give evidence of old infection. Examination of the accessory sinuses of the nose also often discloses chronic inflammatory changes. The heart muscle is often weak and heart function impaired, this being caused by the toxemia. The general muscular system is apt to be flabby. In other respects, the physical examination is usually negative. The blood-pressure is more apt to be below than above the average level for the age and sex.

The urine is not usually abnormal in any respect, the very slight jaundice often present being insufficient to cause demonstrable excretion of bile through this channel. Except for the frequent presence of very mild secondary anemia, the blood picture is normal. The usual blood chemistry determinations return normal findings except that some workers report a rather constant increase in blood cholesterol. We have not verified this point.

Gastric Analysis—These patients will almost invariably show some deviation from the accepted

normal in the matter of gastric analysis. We have until recently placed some reliance upon an abnormal acid curve when the analysis was done by the fractional method. However, recent work upon this laboratory test seems to indicate very definitely that the gastric contents are not intimately mixed and homogeneous except at the very end of gastric digestion. It has been shown that specimens varying widely in acidity may be obtained through the same tube from the same stomach at intervals of only a few seconds, or where two tubes are introduced at the same time with the tips in different portions of the stomach, the acid content of the two returns may be very different. For this reason we have ceased to place any particular reliance on the gastric analysis so far as acids are concerned even in intrinsic gastro-intestinal conditions. It would seem that this evidence is of little or no value in connection with gall-bladder infections.

Duodenal Drainage—During the past several months much work has been done and many articles written upon the diagnostic value of a proceeding first described by B. B. Vincent Lyon and based upon a suggestion by Meltzer, perhaps best known as trans-duodenal gall-bladder drainage. This proceeding depends upon the supposed effect of magnesium sulphate solutions, when introduced directly into the duodenum, of relaxing the tiny sphincter about the opening of the gall ducts and at the same time causing a contraction of the muscular coat of the gall-bladder wall, thus forcing the contents of the gall-bladder into the duodenum and permitting them to be recovered by means of the tube. This theory has been ably defended by Lyon who draws many and interesting conclusions of diagnostic import from the physical character, the gross, and the microscopic appearance and the cultural characteristics of the various bile fractions obtained by his method. He feels that definite and valuable information may thus be obtained as to the condition of the gall-bladder and the ducts. He describes returns characteristic of simple biliary stasis; of stasis accompanied by various degrees of infection; and of obstruction to the ducts. Numerous clinical workers have followed this technic in large series of cases and the resulting conclusions have been widely divergent with different workers, some feeling that Lyon's conclusions were sound, others arriving at the opinion that they were without foundation. A number of laboratory investigators have sought to prove or disprove the basic theory upon which the procedure is founded and little experimental proof of the emptying of the gall-bladder following the injection of magnesium

sulphate into the duodenum has been obtained. As a consequence most of those clinical workers who at first expected definite and accurate diagnostic assistance from the Lyon's technic feel disappointed. At the present time we are not disposed to attach much significance to this test as a diagnostic measure and in fact have largely discontinued it in that connection.

X-Ray Examination—For many years gall-stones have been occasionally demonstrated by x-ray and in those relatively rare instances of course it offered a definite and positive diagnosis, not only as to the presence of stones but as to their number and size. Owing, however, to the chemical make-up of the stones themselves, there was no certainty about this work, and it is quite likely that with old technics not more than 15 or 20 per cent of the gall-stones actually present were shown upon the plate. The x-ray examination was therefore considered of value if positive, and of no value whatever if negative. Of recent years a considerable amount of indirect x-ray evidence of gall-bladder involvement has been brought out. This consists of the various effects which the pathological gall-bladder is believed to exercise upon the adjacent duodenum. Foremost among these is perhaps the pressure deformity of the duodenal bulb produced by an enlarged and adherent gall-bladder. This deformity is quite unlike the irregular deformity produced by duodenal ulcer and is seen in its typical form only in gall-bladder conditions. It also frequently occurs that adhesions resulting from inflammatory processes in the gall-bladder involve the duodenum and produce another and quite characteristic variation in the duodenal shadow. Inflammatory processes in the gall tract may also interfere with the function of the duodenum in ways which are highly suggestive to the trained roentgenologist. At best, however, these indirect signs lack something in conclusiveness, and however pregnant their message may be to the roentgenologist, the surgeon is apt to look upon them with some suspicion.

To George and Leonard of Boston and to Kirklin of Muncie, belongs much of the credit for placing the x-ray diagnosis of gall-bladder conditions upon a sounder footing. Working independently these roentgenologists have developed somewhat similar technics which undoubtedly permit in very many instances the direct demonstration upon the plate or film of the diseased gall-bladder regardless of whether or not it contains stones. This technic is based upon the fact that the pathological gall-bladder is definitely increased in density as compared with the normal

organ, this increase depending in part upon the thickened viscid bile and in part upon the inflammatory thickening of the walls. A quality of ray is used which permits the differentiation of soft tissues to a marked extent; the patient is very carefully prepared by freeing the adjacent colon of fecal matter and gas, and numerous films are made, varying slightly from each other in density. These films are then studied and compared with each other and the gastro-intestinal tract is also studied by means of the usual opaque meal to elicit any possible indirect evidence. It is held (and apparently soundly) that if the shadow of the gall-bladder can be demonstrated at all upon the films thus made, the organ must necessarily be diseased, as it appears to be out of the question to produce any shadow of a normal gall-bladder. The percentage of error seems to be as yet a matter of uncertainty in the hands of most workers and lies in the fact that apparently some definitely pathological gall-bladders cannot be demonstrated upon the film. Both George and Leonard and Kirklin report a very high percentage of surgical confirmation of their positive diagnoses, thus indicating that where the shadow is shown the percentage of accuracy is very high.

Perhaps it may be fairly stated that while the x-ray diagnosis of gall-bladder conditions has not as yet attained the high degree of certainty which it enjoys with regard to duodenal ulcer, it does now occupy a place in the front rank of diagnostic measures in this condition. As definite evidence with regard to the milder forms of gall-bladder infection is discouragingly scant and hard to obtain, there is no question but that the greater accuracy of the modern x-ray examination will result in a large increase in the percentage of correct diagnoses.

Differential Points—The conditions most apt to be mistaken for chronic cholecystitis are atypical duodenal ulcers in which the history fails to conform to the classical type; certain kidney conditions either of the nature of infections or in the form of nephritis which interfere with kidney function and manifest themselves for the time being only in gastric disturbances; chronic gastritis; some types of pathology in the female pelvis; and many of the numerous rather vague conditions resulting from chronic infection within the lower gastrointestinal tract.

Carefully done x-ray examination, inquiry into the influence of food and alkalis upon the abdominal distress, and repeated urine examinations accompanied, if necessary, by investigation into the chemistry of the blood, will as a rule, clear

up the questions with regard to gastric, duodenal, and kidney lesions. Pelvic diseases will be promptly eliminated by the local examination which should be a part of every physical survey in a female patient. X-ray examination of the colon by means of an opaque enema supplementing the twenty-four hour meal, together with direct examination of the lower bowel by means of the proctoscope and sigmoidoscope should rule out disorders of the colon.

Even with the most careful and painstaking work it may happen that the diagnosis hinges upon little more than the history. The x-ray evidence may be inconclusive, the physical examination negative except for moderate tenderness and muscle guarding in the right upper quadrant, and the yellowing of the sclerae may be absent or too slight to seem of moment. In such circumstances it has sometimes appeared worth while to use the trans-duodenal drainage procedure therapeutically at intervals of a week or ten days to see whether improvement resulted, accompanying this measure with suitable dietary restriction, colonic lavage, etc., etc. In some instances improvement has been so prompt and decisive under such measures that the patient has settled the diagnostic question for us by electing to continue upon such a program rather than discuss possible surgery.

It is evident that this method of management applies only to those instances in which the symptoms are not sufficiently severe to warrant immediate surgical intervention. Patients of this type, should they improve upon medical measures, are, in the nature of things, intolerant of any suggestion looking toward surgery as long as their condition remains fairly satisfactory. When such improvement is, as is often the case, only temporary and the symptoms return again and again possibly each time in somewhat aggravated form, the diagnosis must often be cleared up by exploratory operation, or as it is termed by the staff of a famous sanitarium, surgical examination. When we fail by other means to satisfy ourselves as to the true nature of the disease, and when we fail repeatedly to control the symptoms by medical measures, it is well to point out that this is not the last resort measure which the patient is often inclined to think it is; that the risk of a properly conducted exploratory operation is very slight; that the information to be gained from it is more definite than can be obtained in any other way, and that should the suspicion of gall-bladder infection be confirmed upon opening the abdomen, what began as an exploratory operation will terminate as a curative measure.

TRAUMATIC VALGUS WITH DISLOCATION IN LISFRANC'S JOINT

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During and since the war the subject of flat feet has been very prominent both in the medical journals and in the recent texts and there remains little to be said on static foot deformities which has not been iterated and reiterated.

However, there is one phase of this foot subject which is rarely discussed. That phase is traumatic pes valgus and the condition is by no means uncommon.

The foot has a two fold function. It is a passive support in standing and a lever in walking or running. As it is usually conceived, it consists of a longitudinal and a transverse arch properly supported by muscles and ligaments. It seems more natural to consider each foot as the half section of a dome, its apex being the astragalo-scapoid joint, its anterior border the metatarsal heads, its lateral limit the cuboid, and its posterior boundary the tuberosity of the os calcis. The antero-posterior arch of the dome is anchored by several strong ligaments, the calcaneo, cuboideo, and cuneo-navicular, the tarso-metatarsal being the most prominent; by three powerful muscles, the tibialis anticus and posticus the flexor longus digitorum; and by the heavy tough plantar fascia. The lateral arch of the dome does not carry so great a stress and is supported only by the several small intertarsal ligaments.

In static valgus deformities which are of gradual onset the antero-posterior supports are slowly stretched while the lateral ones simply follow this lead. Hence in static valgus we find a true flat foot with the astragalus rotated downward and inward off the os calcis, the anterior portion of the os calcis depressed, and the scaphoid below and in front of its normal position.

These findings are by no means necessary in traumatic valgus. Here the sudden application of force following the lines of least resistance breaks down the weakest supports first, and we may find a marked lateral displacement of the fore-foot with little or no disturbance in the tarsus proper. This difference is very important in the treatment for it will be seen that traumatic valgus is a true dislocation and that the usual non-operative treatment of static valgus is bound to fail in restoring a displaced fore-foot to its normal position. Traumatic valgus, being a true dislocation, should be reduced and immobilized with as much care as any other dislocation would receive.

I will briefly abstract my cases with these points in mind.

Case No. 1. Miss M. R., age twenty-one, a student, complains of disability and deformity in the left foot. Eight years ago while playing she injured her foot. She suffered immediate great pain and disability, was carried into the house and hot applications applied. The foot at once became much swollen and discolored and very sensitive. She was in bed two days, then attempted to walk. Walking was very painful and difficult for three weeks and since that time the present deformity has been evident. She is unable to walk much even on the sidewalks and is entirely unable to walk on broken ground.

PX. The patient walks with a decided limp, the toes of the left foot pointing outward 45 degrees and there being considerable ankle valgus. The inner border of the foot is markedly convex, the anterior surface of the internal cuneiform is palpable and tender, the base of the fifth metatarsal is prominent, the angle between the os-calcis and the tarsus is broadened, and the internal malleolus is much more prominent and apparently lower than on the sound side. All the motions in the foot are limited, especially adduction and inversion. There is 2 cm. of atrophy in the calf muscles. The tendo Achilles is slightly contracted.

Pedrograph shows third degree of flat-foot.

X-ray shows a displacement of the metatarsals outward in Lisfranc's joint.

Operative correction was carried out under ether on June 16. The foot was forcibly manipulated into inversion and varus, the tendo Achilles was lengthened, and a cast applied. Two weeks later the patient was allowed to walk in the cast. One month after operation the cast was removed, the foot found to be in good position and exhibited a normal range of motion in all joints. The cast was reapplied for four weeks at which time it was removed and the patient fitted with shoes. At present the foot is straight, painless, has no valgus tendency and the patient walks without a limp.

Case No. 2. Master R. S., age fourteen, complains of pain, swelling and disability in the right foot. Three days ago while wrestling he injured his foot. Had immediate great pain and was carried home where the foot was bathed in hot water. A few hours later the foot was much swollen and discolored. He has suffered severe pain since that time and has been unable to bear any weight on the member.

PX. The right foot is swollen and discolored and very tender. The inner border of the foot is decidedly convex, the anterior surface of the internal cuneiform is palpable, and the base of the fifth metatarsal is prominent. Range of motion could not be determined because of pain.

X-ray shows a slight outward and downward displacement of the metatarsals on the tarsus.

A diagnosis of traumatic valgus with dislocation in Lisfranc's joint was made which was immediately reduced under ether and the foot splinted in the corrected position. The patient was instructed not to place the foot on the ground for two weeks and to use crutches for the two weeks following that.

At present two months after the injury he has no deformity or disability.

Case No. 3. Mr. C. O., age twenty-three, was first seen on August 9 complaining of deformity and disability in the right foot. On May 1 he was riding a horse which stumbled and fell crushing his right foot in the stirrup. Had immediate great pain and disability and was carried to a private hospital where a doctor said the foot was sprained and applied liniments. The next day the foot was swollen, discolored, and very painful. He remained in the hospital three weeks unable to walk. At the end of this time he began to get around on crutches. Discarded them a month ago but has not been able to work because of pain on weight bearing.

PX. The patient walks with a decided limp, the toes of the right foot pointing outward at an angle of 45 degrees and there being considerable ankle valgus. The inner border of the foot is markedly convex, the anterior surface of the internal cuneiform is palpable and tender. The base of the fifth metatarsal is prominent. There is tenderness all along Lisfranc's articulation. On attempting to bring the forefoot out of its valgus position much pain is elicited and a distinct crepitus is felt. All motions in the foot are limited, especially adduction and inversion.

X-ray shows outward dislocation in the tarso-metatarsal joint.

A diagnosis of traumatic flatfoot with dislocation in Lisfranc's joint was made and a reduction under anesthesia advised. This the patient refused so the usual conservative treatment was applied. He was seen again a few weeks later and while he had experienced some relief he was still considerably disabled.

Case No. 4. Mr. B., age twenty-eight, was first seen on August 9 complaining of pain and deformity in the left foot. In October, 1917 he slipped into a hole severely wrenching his foot. He suffered immediate intense pain and was carried back to the field dressing station where his foot was bound with adhesive. He was kept in the hospital three weeks. Since that time the foot has been painful, especially if he attempts to walk over rough ground.

PX. The patient walks with a decided limp. The toes of the left foot point outward at an angle of 30 degrees. The inner border of the foot is decidedly convex and the internal cuneiform unduly prominent. Its anterior surfaces is palpable and tender. The base of the fifth metatarsal is prominent. Motions in the foot are all free except adduction and inversion which are slightly limited. Calf muscles are not atrophied.

Pedograph shows third degree flatfoot.

X-ray shows slight outward displacement in Lisfranc's joint.

A diagnosis of traumatic pes planus was made and operative reduction advised. This the patient refused so conservative measures were applied. Seen again three weeks later when he said that he has had some relief but is still considerably disabled.

Case No. 5. Mr. F. N., age twenty-five, complains of disability in the left foot. In April, 1919, he was on a train which jumped the track, throwing him several yards. He alighted on his foot and arm and suffered immediate severe pain. He was removed to a hospital where a diagnosis of fractured astragalus was made. The patient was anesthetized and the fracture reduced. He wore a cast on his leg for six weeks when he was discharged as cured. Has always had some trouble with his foot since the injury.

PX. The patient walks without a limp but limps badly on attempting to run. Examination shows slight valgity on the left. There is no other visible deformity. Motion in the foot and ankle is markedly limited as follows; eversion, 0; inversion, 0; adduction, 0; abduction, 0; anteflexion, 15°; dorsiflexion, 10°. The calf muscles are atrophied 4 cm. The patient is entirely unable to raise himself on the toes of the left foot. There is no tenderness.

Pedograph shows second degree flatfoot.

X-ray shows healed fracture across the neck of the astragalus and slight outward displacement of the scaphoid on the astragalus.

A diagnosis of healed fracture of the astragalus with fibrous ankylosis in all astragaloid joints was made. He was advised to secure mobilization in the ankle by passive manipulations daily, and failing in this to have the joints mobilized and the deformity corrected under anesthesia. He was seen again two weeks ago and although the conservative treatment advised had been carefully carried out he showed very slight improvement.

It will be seen that these cases have several points in common. First, the severe trauma followed by immediate disability of the foot and followed in a few hours by much swelling and discoloration. Second, there is in all the cases except case II which was seen shortly after the injury a history of pain and disability lasting several weeks, and third, there is a history of more or less disability in the foot for months and years after the injury in the untreated cases.

The physical findings were also similar in that in each case there was a convexity of the inner border of the foot, a prominence of the internal cuneiform and the base of the fifth metatarsal, and varying degrees of tenderness over Lisfranc's articulation.

The x-ray invariably shows displacement outward of the metatarsals.

Cases I and II which were treated as true dislocations show good functional results. Case V which was also correctly treated shows a good architectural result, the ankylosis being probably the result of the fracture and not of the accompanying dislocation. Cases III and IV which had practically no treatment at the time of injury and which have now been under conservative treatment for over two months show no improvement and will show no improvement unless an operative reduction is made.

CONCLUSIONS

I. Traumatic flat foot is a true dislocation and should be treated as such.

II. A convex inner border of the foot with a prominent cuneiform and fifth metatarsal is the most important physical sign of dislocation in Lisfranc's joint.

III. Operative reduction is usually indicated in chronic cases.

IV. Recent and operative cases carry a good prognosis.

THE DOCTRINE OF THE PREPARED SOIL: A NEGLECTED FACTOR IN SURGICAL INFECTIONS*

HUGH CABOT, C.M.G., M.D., F.A.C.S.

Professor of Surgery, Ann Arbor, Michigan

The introduction of the germ theory of disease may be said to have laid the foundation of modern medicine and to be the whole basis of our views in regard to surgical infections. The practical application of this doctrine to wounds and to the practice of surgery by Lord Lister is properly regarded as the beginning of modern surgery. From this developed aseptic surgery, opening the whole field of exploratory operations to the properly equipped surgeon. With this development went the growth of the laboratory as an essential agent in enabling us to fit treatment to disease. Today we are exceedingly dependent upon the results of laboratory investigations, and one might perhaps refer to the present era as the laboratory period. On the other hand, it sometimes occurs to me to think that we at times lose our sense of proportion and become altogether too dependent upon our laboratory associates and at times rely too implicitly upon their results. Certainly the modern medical student often fails to recognize the proper relation of laboratory investigations to the care of patients to such an extent that they be-

*Read before Tri-State District Medical Association, Milwaukee, Wisconsin, November 15, 1921.

come not his assistant, but his master. It is not rare to find in the active, devoted young hospital surgeon a state of mind in which he almost believes that bacteria are the cause of infection. He appears to forget that infection is a result, that bacteria in and of themselves can do nothing except in contact with living tissue and then, often, only under highly special conditions. He forgets that it takes two to make a fight; that there are two essential parties to an infection. Perhaps he may be trusted to learn, as time goes on, that infection is nothing more nor less than the reaction of an individual to a particular kind of an insult and that with two people equally exposed to infection one may acquire it and one may not.

Much as we know about the etiology of disease we are still much in the dark concerning the conditions of the body antecedent or predisposing to infection. We use the phrase susceptibility with a very vague conception of what constitutes susceptibility and we talk rather gravely about immunity while there is still much in this field of which we are ignorant. Of the bactericidal power of the blood and tissue fluids we know something, but not all. We know something of the ability of cells to destroy bacteria, but of the precise conditions which influence their activity there is much that we do not know. Here is an immense field still open for further investigation and here, beyond question, great reputations will be made.

But it is not this aspect of infection that I desire today particularly to call your attention. It is rather to certain other conditions favorable to infection that I wish to invite your attention. Modern surgery is dependent upon our ability to avoid infections which might perhaps be called extraneous. I do not wish to confine this term extraneous to the actual introduction of bacteria into the wound, though they are, of course, an important factor. Rather do I wish to include all those conditions as the result of which wound infection of some degree results. I need not take your time to point out that, though the whole structure of modern surgery is erected upon our ability to avoid infections which do not exist before operation, it is notorious that our success is incomplete. No one of us goes through a busy year without having some patient—even many—whose convalescence is lengthened, whose life is jeopardized and in whom the result of our efforts is less perfect than it might have been, because we did not avoid infection. A certain, though perhaps small, number of the deaths chargeable to surgery are the result of our failure to avoid infection. This appears to me to be one of the weakest points in the armour of the surgeon, and

I am not sure that our enthusiastic devotion to the study of bacteriology and our almost slavish adherence to the view that bacteria are the cause of infection has not to some extent drawn our attention away from other factors which are of almost equal importance. Most of you will be able to call to mind the situation which arises in a hospital when in a given period of time there is more wound infection than is the average for that locality and suspicion arises that all is not well. At once we begin to suspect that the sponges and such gear concerned with the operation have not been properly sterilized or that the ligatures or sutures have been carelessly prepared; or failing that, that our assistants or our nurses have failed of their full devotion to the theory of aseptic surgery. Even perchance we begin to investigate the very air we breathe as the source of this noxious happening which has shaken our confidence in our ability to avoid infection. Here we see in its purest form the operation of the doctrine of the goat-showing our eternal desire to pin on to something or somebody the errors of omission or commission which we believe to have brought about our downfall. As a rule, in my judgment, the surgeon is the chief source of these wound infections, and it must be shown that this be not true before we try to lay the blame at the door of others. I do not at all intend to suggest that bacteria are introduced into the wound by the surgeon. It is precisely because I do not believe that the essential factor here is the introduction of bacteria that I take your time at all in discussing this question. The responsibility of the surgeon appears to me to include not only his liability to introduce bacteria, but also his failure to protect the patient from those conditions which make infection probable. These conditions are manifold and I like to group them under the head of The Prepared Soil. Now these conditions making for infection may be either general or local.

GENERAL CONDITIONS

Under the general conditions we should group those which we may refer to, perhaps rather vaguely, under the phrase, lowered resistance.

Fear—Among these I would put in a high position fear. We all of us are familiar with the fact that the condition of the mind has an important effect on the condition of the body, but we fail sometimes I think to apply this doctrine where it would do most good. Many times I have seen patients whose convalescence seemed to me clearly lengthened, whose wounds healed sluggishly or acquired infection, largely because from the outset they were in mortal terror of the result. The

OTTUMWA IS READY FOR YOU. ARE YOU READY FOR OTTUMWA?

reverse of the picture is perhaps more striking. We have, all of us, seen patients whose optimism and fearlessness were such that they withstood fearful surgical insults without shaking either their equanimity or their healing power. Now fear, particularly in connection with surgery, is not a thing which can be wholly avoided, yet it may be much minimized, and, as I think, to great advantage. Crile has clearly shown that the minimizing of fear in operations upon the thyroid gland under toxic conditions does much to lower mortality. While it is undoubtedly true that fear is an unusually important factor in disease of the thyroid gland, it is none the less an important factor always in surgery, and I feel sure that we shall do well to guard our patients against fear and to surround them by the largest possible amount of protection in order to minimize its affect upon their reaction to surgery.

Starvation—At a somewhat earlier time I should have placed starvation high in the list of those conditions which predispose to infection. Undoubtedly a generation ago, or in the earlier days of abdominal surgery, we deprived our patients of food to an unwise extent and thereby lowered their resistance. I am not sure that we have even yet reached the limit of our willingness to continue patients upon an ordinary diet up to the last moment. Particularly is this important in the old, the feeble and the young. At both ends of the scale of life we meet conditions of diminished resistance to insult, and we must be upon our guard against depriving these patients of their ordinary income of sustenance.

Dehydration—Perhaps under starvation, but not always thought of in that light, should be considered dehydration, the withdrawal of water before operative procedures. Of late years more and more the evidence has been forthcoming that the withdrawal of water is gravely dangerous to many patients under many conditions. I believe that there can be no doubt that the habit of most of us a generation ago of practically withdrawing liquids entirely during the twelve hours previous to operation and very largely withholding them during the same period after operation tended to invite lowered resistance and consequent infection. I entirely believe that the withdrawal of water should be reduced to a minimum; that if patients have suffered from any condition in which their body fluids have been reduced that this reduction should be made good before operation and maintained afterwards. None of us, I take it, withhold water before operation to the extent that we did years ago, but I am not sure that we realize the danger of dehydration quite

enough, and doubt if the introduction of fluid both by rectum and under the skin as the antecedent to operations in critical cases is practiced as much as its importance would justify. In the same way I doubt if we pay enough attention to fluid intake after operation, especially in patients in whom liquids cannot properly be given by mouth in sufficient quantities. To sum up what I have to say in regard to starvation and dehydration, I believe we should use every endeavor to maintain patients on a full diet to the last safe moment, and to be sure that their body fluids are at least up to normal before operation and kept to normal after operation.

Anaesthesia—Another important general condition tending to lower resistance is anaesthesia. The last ten years have seen an enormous improvement in the administration of anaesthetics. It is now widely regarded as a rather special business and the days when we entrusted it to the least competent person are happily of the past. Nevertheless, I doubt whether we sufficiently recognize that the proper choice and skillful administration of the anaesthetic is an important factor in the healing of our wounds. For instance, the selection of ether for no reason other than that it is the only anaesthetic sufficiently fool-proof to be within the safety zone of the unskilled anaesthetist may well result in irritation of the respiratory passages with coughing, producing pain and bringing much additional strain upon the sutures of the abdominal wound. Had this patient been given some other anaesthetic better suited to his condition, his wound healing might well have been less stormy.

Length of Operation—And finally, under the general conditions predisposing to infection, I would put the time consumed in the operation. I fear that we are prone to forget that the time consumed in operations is taken directly from the stock of vitality of the patient. This we cannot seriously doubt because we know that particularly with ether and chloroform, undoubtedly the two most common anaesthetics, prolonged operation means a very undesirable action upon the tissues, with definite lessening of the alkali reserve and the production of at least some degree of acidosis. I believe that we should always bear in mind the requirement to get through our work in the shortest time compatible with doing everything which should be done, neither more nor less. A full adherence to this requirement would probably bar from surgery some of those people lacking in manual dexterity and who could under no conditions become dexterous operators. But though I may be judged unkind and

inconsiderate, I am not sure that there are not today engaged in the practice of surgery many whom the Lord never intended to be surgeons and whose talents would be better employed in some other field. I continue to believe that the minimum expenditure of time is a thing upon which the patient has a right to insist.

LOCAL CONDITIONS

Though I have no doubt of the importance of the general conditions just discussed as factors tending to increase liability to infection, I think it probable that the local conditions surrounding a surgical operation are of even greater importance.

Skin Preparation—In this field, as in the field just discussed, we have made a considerable advance over the conditions of a generation ago. At that time the use of a great variety of highly irritating solutions in the business of preparing the skin for operation was regarded as essential. Gradually we have abandoned one complicated method after another until today it appears that ordinary cleanliness is perhaps the most important factor, and that the minimum application of irritants gives the best results. I would, however, still warn against over-preparation of the skin, which, in fact, means a greater reliance upon the ability of tissues to look after themselves if not too grossly insulted.

But I come now to a group of local conditions which seem to me of commanding importance and which are, to my mind, the most important factors in the doctrine of the prepared soil.

Rough Handling of Tissues—Body tissues are undeniably delicate and die under conditions of insult. Therefore, roughness in handling, the use of dull instruments which bite and chew rather than cut, the grasping of masses of tissue in order to control bleeding, the heavy-handed drag on retractors of the absent-minded assistant turned for the moment into an interested spectator, are insults which no tissue can be expected to withstand. Yet it is all too common to see tissues handled in a manner little short of brutal. This results in death of the tissue, necrosis and the production of a medium highly favorable for the growth of bacteria. Those surgeons get the best results whose instruments are sharp, whose touch is delicate, whose eyesight is good, and whose assistants are impressed not only with the fear of God, but with the fear of tissue damage.

Haemostasis—Failure of accurate haemostasis is another factor producing conditions favorable to bacterial growth. Dry wounds heal kindly;

wounds containing blood clot are notoriously prone to infection.

Mass Ligatures—Quite along the same line is the inclusion of masses of tissue in a tight ligature where the same amount of haemostasis or better could be obtained by picking up, not a fist full of tissue, but the vessel itself. The practice of strangling a mass of tissue in order to approximate a wound and control bleeding is likewise objectionable, resulting in necrosis and favoring infection.

Our experience in the war shed a bright light upon this question of wound infection. We did not begin to handle our wounds in a satisfactory manner until we learned that the excision of damaged tissues with removal of infectious material in bulk was the key to success. Now in these wounds we do not abolish bacteria. Not only were the surrounding tissues often already invaded, but the conditions under which these operations were done did not lend themselves to first-class aseptic technique. Nevertheless it was clearly shown that the removal of devitalized tissue and grossly infected structures, particularly if done relatively early, was often followed by surprisingly kind healing. This, I think, clearly demonstrated the action of dead tissue and blood clot as a prepared soil upon which bacteria would grow, though unable to conquer the tissue when in a reasonably normal condition. The avoidance, therefore, of those conditions which make a wound favorable soil for bacterial growth becomes a factor of the first importance in avoiding infection. Surgery is still an art, and I doubt whether we value quite highly enough the art of surgery. Manual skill and dexterity are still factors of first-class importance. Asepsis and anaesthesia have tended to bring surgery to a point when speed and dexterity are something short of essential to success. In the pre-anaesthetic, and somewhat less in the pre-antiseptic days, only men of great character could be great surgeons. Today our patients do not die and therefore we regard our operations as a success. We are apt to charge off wound infection to the carelessness of others and curse roundly our maker of sterilizers or our maker of cat gut, when we should rather look to ourselves as the real sources of the damage. Heavy hands, rough surgery, needlessly long incisions, crushed tissues, impaired circulation from too tight sutures, these and other failures of technique produce a soil prepared for infection. Given the prepared soil infection will follow in a proportion of cases quite sufficient to make up to the total of our failures, without

the assumption that it is our assistants rather than ourselves who are to blame.

Now there are certain fields in which this Doctrine of the Prepared Soil is of primary importance and yet in which no surgical wound is involved. Perhaps this is nowhere better demonstrated than in the natural history of infections of the urinary bladder. In parenthesis one might add that failure to recognize the application of this doctrine is a potent factor in the production of bladder infection. Briefly stated, the situation in regard to infections of the bladder is this: The introduction of bacteria into a normal bladder will not cause infection. This may be stated dogmatically, as there is a vast accumulation of experimental work behind it. Even moderate trauma of the bladder will not lead to infection, as shown by the fact that the use of the cystoscope and the ureter catheter even in unskilled hands is rarely followed by observable infection. In fact, did infection follow the introduction of bacteria into the bladder the whole great field of cystoscopy would be non-existent. It is quite impossible to introduce an instrument into the bladder, particularly in the male, without at the same time introducing, from the urethra, organisms. It is at least exceedingly common that the use of the cystoscope, and particularly the ureter catheter, produces slight abrasion of the mucus membrane, as witnessed by the exceeding frequency of microscopic blood in the urine collected from the ureters, and yet it is notorious that these people have no recognized infection.

What then are the conditions under which infection of the otherwise normal bladder will take place? They are the conditions resulting from overdistention due to urethral obstruction. In this way is produced pressure upon the bladder wall. The arterial supply, having behind it a positive force and a force which can be increased automatically, keeps up the nutrition of the tissue, but during this same period of pressure the venous return is gravely handicapped. Now let us assume that this bladder is suddenly emptied and the pressure released. At once active congestion of the whole bladder will ensue; if the pressure has been considerable there may be petechial hemorrhages or even gross bleeding. In the minor degrees there is oedema and soggy devitalized tissue. Here is the prepared soil on which the experimenter has been able, with considerable regularity, to produce bladder infections, and in this way, to our shame be it said, is commonly produced the so-called "catheter cystitis," which has in fact little or no relation to the catheter. We see this happening all too frequently in the

conditions of so-called reflex retention of urine following surgical operations commonly in the neighborhood of the bladder. The mechanism is, I think, easy to understand, at least in theory. The machinery of normal urination depends upon the transmission of stimuli through the reflex arc of the bladder neck through lumbar cord to bladder sphincter. If and when these paths of transmission are occupied more or less to the limit with the transmission of painful stimuli from recent surgical insult they are incapable of attending to the minor stimuli of bladder distention and the reflex breaks down. It has been far too much our custom in the past to postpone what we regarded as the evil day when catheterization in reflex retention must be undertaken. When faced with the overdistended bladder we are obliged to resort to the catheter, and when, owing to the prepared soil, infection followed in logical sequence we have sought refuge in the Doctrine of the Goat. We have forsooth cursed our sterilizer of catheters, our nurses, our house officers for faults which are primarily our own. Had we been willing to face the facts at the proper time, to realize that in the absence of overdistention, with its prepared soil, catheterization was an utterly harmless proceeding and, as a result of this logical sequence, had been willing to catheterize before overdistention had occurred, the so-called catheter cystitis in this group of cases would long since have become a surgical curiosity. I believe we may confidently assert that in bladders not the seat of any lesion catheterization is harmless if at no time an amount of urine in excess of a low normal, which may be put at ten ounces, is allowed to accumulate. If in this group of cases we desire to make assurance doubly sure, then we shall do what we can before operation to make the urine itself an uncongenial abiding place for organisms of the colon bacillus group. We must remember that in the infections produced by this organism the urine itself is the soil in which they multiply most freely, and that given a source within the urinary tract from which colon bacilli may enter the urine, enormous multiplication will go on with certainty. We shall therefore be well advised to administer as a routine some formaldehyde containing drug immediately preceding all surgical operations at all commonly followed by reflex retention of urine. Attention to these two points, the avoidance of distention preparing the soil, and the making of the urine a disagreeable climate for the growth of bacteria, will wipe this quasi-surgical infection from the list of our failures.

Let me now briefly recapitulate what I have

consumed so much time in saying. We have, I believe, in the consideration of wound infections and allied conditions paid too much attention to the bacteria themselves and too little to the conditions which favor bacterial growth. Complete sterilization of operative fields may be judged impossible and, even though we were able to enter the body without the possibility of introducing pathogenic bacteria, we must still remember that bacteria circulate in the blood far more often than we realize, and will find their way to those portions of the body where conditions are favorable to their growth. No one of us doubts that what one might call spontaneous infection will occur when the skin is unbroken. We cannot, therefore, doubt that if we leave behind us a bruised and bleeding part infection will follow in a certain proportion of the cases. Particularly to those of you who are concerned with the training of the doctors of the future I would commend the Doctrine of the Prepared Soil. I would beg of you to introduce this into the confession of faith of your surgical pupils and to bring them to the high estate of the surgeon duly impressed with the view that they must respect the minds and the bodies of their patients quite as much when under an anaesthetic as they do in everyday life. Instill into them a decent respect for the tissues of others to the end that the art of surgery may come more smoothly to its fruition.

PHYSICIANS WHO LOCATED IN IOWA IN THE PERIOD BETWEEN 1850 AND 1860

D. S. FAIRCHILD, M.D., F.A.C.S., Clinton

DR. JOHN FORREST DILLON

Dr. J. F. Dillon graduated from the College of Physicians and Surgeons at Davenport, Iowa, in 1850 and became a member of the Iowa State Medical Society at its first meeting in Burlington, June 19, 1850. He also had the honor of writing the first article in the first number of the first medical journal published in Iowa. The journal was published at Keokuk and was called "The Western Medico-Chirurgical Journal." Date September 1, 1850. The first article is entitled, "Rheumatic Carditis, Autopsical Examination," by John Forrest Dillon, M.D., Farmington, Iowa. It is a very interesting article and foreshadows the future success of the author.

The following autobiographical sketch of Dr. John Forrest Dillon, afterward the distinguished Judge Dillon, is taken from a letter to Dr. Geo.

F. Jenkins and published in the Iowa Medical Journal February, 1908.

"I was born in the state of New York on December 25, 1831. My father moved with his family, of which I was the eldest, to Davenport, Iowa, in July, 1838, I being then a little less than seven years of age. I lived in Davenport from that time until 1879, when I came to New York to accept a professorship of law in Columbia University, and the position of general counsel of the Union Pacific Railroad Company.

I commenced the study of medicine when about seventeen years of age in the office of Dr. E. S. Barrows, at Davenport, Iowa. Dr. Barrows was a prominent physician and successful surgeon, having been a surgeon in the United States Army in the Seminole Indian War. He had wonderful skill in diagnosis and was a bold and successful practitioner. He made very little use in his ordinary practice of any other remedies but calomel, blue mass, Dover's powder and compound cathartic pills.

A year or so after I entered the office of Dr. Barrows as a student, was formed the Rock Island Medical School, the prototype or original, as I understood it, of the present College of Physicians and Surgeons of Keokuk, Iowa, of which you are the president.

I attended one course of lectures at Rock Island. The next year the college was removed to Davenport, Iowa, where I attended a second course and was regularly graduated in the spring of 1850 an M.D.

The professors as a body were able men, some of them men of great learning and even genius. Abler teachers than Professor Richards who taught practice, Professor Sanford who taught surgery and Professor Armor who taught physiology, it would have been difficult to find in the chairs of any contemporary medical institution.

I happened to attend the first meeting of the Iowa Medical Society in 1850, at Burlington, in this way. Having been graduated I desired to seek a place in which to practice my profession and I consulted Professor Sanford, having an admiration and affection for him. He said, "I have lived many years in Farmington, Van Buren county, a small place on the Des Moines river, but my duties in connection with the medical college are such that I have resolved to change my residence and follow the college to Keokuk." Dr. Sanford had obtained great celebrity as a surgeon and indeed had outgrown the little town of Farmington. He suggested to me that his leaving Farmington would create a vacancy which would perhaps make that town a desirable place for me

in which to locate. When I reflect that I was really under twenty years of age, without experience, the idea that I could go to Farmington and occupy in any degree the place which Dr. Sanford left seems now to me almost amusing. I resolved, however, to take his advice and so arranged my journey from Davenport to Farmington as to enable me to attend the first meeting of the Iowa Medical Society in Burlington in June, 1850.

After the lapse of fifty and seven years I distinctly recall that meeting and I regarded it then, as I have regarded it ever since, as an assemblage of men of remarkable learning and ability. Among those present were Sanford, Hughes, McGugin, Henry, Elbert, Fountain, Haines, Low, Ransom, Rauch, all distinguished names.

My exchequer was far from plethoric and I was obliged to practice strict economy. I rented for an office a small brick building on the crumbling bank of the Des Moines River, one story high, about twenty feet square, in a dilapidated condition, at a cost of \$4 per month. I engaged board and lodging at a boarding house kept by Mrs. Corwin, where I made my home during the three or four months I remained in Farmington, at a cost of \$3.50 per week. Among the boarders was a young lawyer by the name of Howe, who had resided in Farmington some little time. We became well acquainted and spent nearly every evening walking up and down the banks of the Des Moines River, in speculation upon what the future had in reserve for us. He was almost as destitute of clients as I was of patients.

There were at least two old established physicians in this place, Dr. Barton and Dr. Lane. How could a young man under twenty years of age expect to find employment under these circumstances unless both of the physicians were engaged or out of the place? I will mention one case with a little particularity since it was epochal, having had the effects of changing the whole current and career of my life. On the hills near Farmington, about two miles distant there was a large brickyard. On a hot August day the men worked hard, and their skin being relaxed and their appetites vigorous, they ate a hearty supper when a cool and grateful breeze sprang up and swept the valley. These workmen sat out in it, became chilled and two or three hours afterwards were seized with violent attacks of cholera morbus. They sent post haste to town for a physician, both Dr. Barton and Dr. Lane were absent and there was nothing to do but to call on me. I had no horse or buggy of my own and if I had I would have found it difficult to

have driven over the rough roads and as for many years I had been troubled with inguinal hernia, I could not ride on horseback. The last time I attempted to do so nearly cost me my life. There was no alternative but to walk to the brickyard, where I found the men in great suffering, requiring liberal doses of laudanum and stimulants and my personal attention for several hours. Weary and exhausted I sought my way home on foot and I saw the sun rising over the Eastern hills just as I was reaching my lodgings. Maybe it was the sun of Austerlitz but I didn't so regard it at that time. Two or three years ago when Dr. Lorenz of Vienna was in this country he took lunch with myself and several gentlemen, one of whom mentioned I had formerly been a physician, whereupon Dr. Lorenz evinced curiosity to know why I left the profession, and I proceeded to give him the narrative that I am now relating. When I had finished one of the gentlemen said, "Now, that you have told all about this there is one thing you have not mentioned did these men live or die?" to which I responded, "That question has been more than once asked but I have always evaded the answer."

This night's experience set me to thinking and the next evening when young lawyer Howe and myself were taking our regular walk up and down the banks of the Des Moines River I turned to him and said, "Howe, I have made a great mistake, I cannot practice medicine in this country without being able to ride on horseback, which I am utterly unable to do. I might as well admit the mistake and turn my mind to something else, I shall read law. Tell me, what is the first book that a student of law requires?" He answered, "Blackstone's Commentaries." "Have you got them?" He replied, "Yes, I have them and the Iowa Blue books of Laws, and those are the only books I have." He was kind enough to loan me this Blackstone and I began at once to read law in my little dilapidated office.

Another event in my brief medical career at Farmington is chronicled in the first number of the *Medico-Chirurgical Journal of Keokuk*, of September 1, 1850. It is the first article and first number of that publication, entitled, "Rheumatic Carditis, Autopsical Examination," by Jno. Forrest Dillon, M.D., Farmington, Iowa," thus connecting me in a slight way with the earliest medical literature of the state.

On inquiry of the present officers of the Keokuk Medical College, I learned that they had no copy of the publication and I only succeeded in obtaining one through the kindness and courtesy of the Iowa Historical Association.

I shall not undertake to re-state the substance of that article; briefly outlined it is this: A laborer on the public works at the small town of Croton, about five miles distant from Farmington, suddenly died under circumstances that lead to a very general belief among the people of Croton that he had died from malpractice. The post-mortem examination disclosed, however, that he died of apoplexy caused by hypertrophy of the heart. The heart was found to be nearly double the normal size and weight. It fell my lot after conducting the examination to take the organ in my hand and explain to the excited citizens the cause of the death and thus allay public excitement. The article concludes as follows:

Before taking my departure from Croton, I took occasion to give the bontanic physician some salutary advice, adverted to the unenviable predicament in which his ignorance had plunged him, and endeavored to inspire him with a love for scientific knowledge, by following the example of *Le Maitre de Philosophie*, in a *Comedie* of the celebrated Moliere, in which he endeavors to impress the truth of the following sentiment upon the mind of Monsieur Jourdain "*Sans la science, la vie est presque une image de la mort.*" Whether I succeeded in convincing him of it so readily, as was the case with *Le Bourgeois gentilhomme*, the future must determine.

I have drawn up this hasty sketch of the above case for two prominent reasons, in the first place to present your readers with some additional testimony confirmatory of the frequent connection between arthritic and cardiac disease; and in the second place, to illustrate the great benefit often derivable from necroscopic examination. The one is frequently overlooked, the other too sadly neglected.

In the fall of 1850 I concluded to return to Davenport where my mother and sister lived and take up my home with them and utilize my little knowledge of drugs and medicines and get a livelihood by opening a small drug store, which would also afford leisure time to enable me to read law. This I continued to do until the spring of 1852 when I applied for admission to the bar of the District Court of Scott County, Iowa, and on motion of Mr. Austin Corbin, a man very well-known afterwards in Iowa and elsewhere, I was admitted. The same year I was elected prosecuting attorney for the county and practiced law in Scott and adjoining counties until 1858, when I was elected Judge of the District Court of the Seventh Judicial District for the counties of Muscatine, Scott, Clinton and Jackson; re-elected four years afterward. Was then transferred to

the supreme bench of the state and was re-elected six years afterwards. Before qualifying for my second term I was appointed by President Grant, United States Circuit Judge for the Eighth Judicial Circuit, comprising the states of Minnesota, Iowa, Missouri, Arkansas, Kansas, Nebraska and afterwards Colorado. I held the last mentioned office for ten years, until 1879, when I resigned the same to accept the professorship of law at Columbia University and removed East, where I have ever since practiced my profession. I find the little knowledge that I acquired of medicine and its principles not only to be a great satisfaction to me throughout my life but at times to be of utility, and I maintained a nominal connection with the medical profession until about the period when I came to New York by delivering each year lectures on medical jurisprudence at the Iowa University to the combined law and medical classes of the institution."

HYDATIDIFORM MOLE

A further study of hydatidiform mole has been undertaken at this hospital especially in regard to the frequency of malignancy following this condition. An attempt is being made to collect case reports from outside physicians. Cases reported by physicians will be greatly appreciated and the physician will be given due credit in any literature published.

Address communications to—

Robert B. Kennedy, M.D.

Chicago Lying-in-Hospital, 426 E. 51st St., Chicago

EXAMINATIONS NATIONAL BOARD OF MEDICAL EXAMINERS

Part I, June 25, 26, 27, 1923.

Part II, June 28, 29, 1923.

Part I, September 24, 25, 26, 1923.

Part II, September 27, 28, 1923.

All applications for these examinations must be made on or before May 15.

Further information may be obtained from the Secretary, Dr. J. S. Rodman, 1310 Medical Arts Building, Philadelphia, Pennsylvania.

DEATHS FROM ALCOHOL

An increase in the number of deaths from alcohol in New York State of 172 against last year is reported by the department of health.

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The Journal of the Iowa State Medical Society

D. S. FAIRCHILD, Editor.....Clinton, Iowa

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MEMORIAL INSTITUTE TO THE MEMORY OF WILLIAM C. GORGAS

Late Surgeon General of the United States Army

At four o'clock p. m., Sunday, February 18, 1923, in the exposition grounds, City of Panama, the cornerstone of the Gorgas Memorial Institute of Research in Tropical Diseases and Preventive Medicine, was laid in the midst of impressive ceremonies and in the presence of a great concourse of people, including a group of more than 200 Fellows of the American College of Surgeons.

At the appointed hour, His Excellency, Dr. Belisario Porras, President of the Republic of Panama, accompanied by his private secretary Don Raul Calvo, and his Aide-de-Camp Colonel Enrique. Icaz Fabega and Major Edgar Bock, Superintendent of the Santo Tomas Hospital, arrived. After the band had rendered the Anthem of the Republic and an exchange of salutations with the Fellows of the American College of Surgeons, President Porras, Minister South, Major Bock, members of the Diplomatic Corps, Cabinet Ministers, and other dignitaries, including Fellows of the College of Surgeons, took seats around a tribune erected at a point facing the site at which the ceremonies of laying the cornerstone were to be performed. President Porras delivered an eloquent address, which we print with a profound feeling of respect and appreciation.

We of the United States join in expressing a profound feeling of gratitude to President Porras and the Republic of Panama for their generous aid in providing a means of establishing a great institution for study and research in tropical diseases. The new Santo Tomas Hospital of more than 400 beds, at a cost of more than \$1,000,000.00, adjoining the Gorgas Memorial, to serve as a clinical hospital in the study of diseases of the tropics, at the expense of the Republic of Panama, will be of inestimable value in making the memorial, at the expense of the United States, the great school of tropical medicine of the world.

It was in this favored region that General Gorgas was given the opportunity, through the clear vision of President Roosevelt, to demonstrate what the science of medicine could accomplish under government aid and encouragement, in relieving beautiful tropical regions of the dangers which had so long surrounded them, and make the beautiful spots of the world safe for men and commerce. What the future has in store for the Republic of Panama cannot be predicted at the present moment, but to those who know of its beauties, the most hopeful signs are apparent.

It was most fortunate that Dr. Porras, who had personally known General Gorgas and had been associated with him in the work which had made Panama famous, and General Gorgas, one of the great men of all time, could at this time be the man to dedicate this Memorial to the man of the ages.

ADDRESS

Delivered by His Excellency, Dr. Belisario Porras,
on the Occasion of the Laying of the Corner-
stone of the Gorgas Memorial Institute of
Tropical Medicine

Ladies and Gentlemen:

I experience profound satisfaction from the fact that it is my privilege to lay the cornerstone of the Institute of Tropical Medicine which Panama dedicates to William Crawford Gorgas, to perpetuate his memory here, on the shores of the murmuring Pacific and in close proximity to that thoroughfare which—hurriedly in former days as though pursued by the phantom of death and lingeringly today as though regretting the brevity of time which compels them to forego the delights of our benign and even climate, the beauty of our country's unchanging verdure and the incomparable blue of our sky—has been used by men of every nationality for whom Gorgas cherished only sentiments of deep humanity which prevailed always over every prejudice of race, nationality, birth or class.

This sense of satisfaction that I experience now is derived primarily from the fact that I was a friend of this man whose memory we are today assembled here to tribute, and as such, I was in an admirable position to fully judge the purity of his noble and good heart and further, being one of the old men of the days when he lived in our midst, I am better able, from experience, to appreciate more fully than the men of the younger generation, the great work of health, life and happiness which this great man accomplished for my country.

The monument which we will erect here will be an expression of Panama's gratitude to the man who proved beyond the peradventure of a doubt that the tropics could be made habitable for all the races of the earth. We are indebted to the genius of Gorgas for the transformation of Panama from a fever-ridden land to the paradise we now live in and the benefits of health which engenders content, activity, clear-mindedness, energy and even valor. Therefore, we consider that Gorgas, to a certain extent belongs to us also, because it was here that he saw his greatest effort to lighten the burden of a suffering humanity crowned with success.

It is the privilege of great men, sages, discoverers, heroes and martyrs, whose activities, teachings and examples are not circumscribed to the narrow confines of the land of their birth and whose achievements in the world have been beneficial to the majority if not all their fellow-beings, to be universally loved. Such men—and Gorgas was one of them—cannot be citizens of one particular city, town or village, every city and every nation of the earth claims them; they are the real citizens of the world.

As in the case of Esculapius, when it was found necessary to enlist the services of an oracle to determine in which of the cities of ancient Greece which disputed this honor, was his birthplace, and, as in the case of Christopher Columbus, who has been declared an Italian, a Spaniard and more recently a Jew, the birthplace of Gorgas, I am informed, is disputed, both Alabama and Georgia claiming this honor. However, Gorgas does not belong exclusively to the United States of North America where he was educated. Cuba and Serbia, Bulgaria and Ecuador, Panama and South Africa, all have claims to him as a result of his having lived and worked among them for the good of the human family.

The work accomplished in the world by the great Gorgas is immense, immeasurable. Of Hippocrates it may be said that he was the first to divorce medicine from witchcraft and the ecclesiastical mysticism of his times; of Galen, that he was a great physician and writer to whom is attributed the authorship, of about 500 books intended to popularize the practice of medicine; of the great Pasteur, de Kock, Ramon Cajal, Elhrich, Finley and Rose, that they penetrated far into the hidden secrets of the invisible, the infinitesimal world; of Metchnikoff that he evolved the famous Phagocyte theory and with Roux,

Chamberland and Calmette, collaborated in and continued the work of the great Pasteur; but how can we describe Gorgas, who solved the apparently impossible problem of making the tropics habitable, thus complementing the marvelous work of God who created us in order that we might live on this terrestrial globe and be happy on it? Gorgas destroyed the morasses of death and gave us pure drinking water and purified the air of our exuberant tropical forests and our colonial cities. Gorgas redeemed the tropics.

I can still remember, and it seems to me a horrible nightmare, the time, fifty years ago when, on my way to Bogota to finish my studies I found it indispensable to spend a night in Colon. Sleep during that night was impossible for me because of the constant and tormenting bites of the mosquitoes whose incessant buzzing smote on my ears as though they were the discordant notes of an infernal serenade. These minute tormentors were so numerous that by clutching at the apparently empty air I caught handful after handful of these tormenting pests. Neither can I forget conditions as they prevailed when I returned from college ten years later and entered the employ of the French Canal Company. From that time I was able to realize or at least suspect the underlying cause of the Frenchmen's failure in their attempt to construct the trans-Isthmian waterway. They constructed beautiful residences and tree-lined avenues and admirably organized their offices; but they did nothing, in fact they knew nothing about tropical sanitation and apparently never suspected its worth.

In those days of long ago, it was the most natural thing for one to promenade the city's thoroughfares holding an handkerchief to one's nostrils, to keep out or lessen the stench contaminating the air as a result of decaying vegetation, stagnant or putrid puddles and primitive or defective sewerage. On every hand one encountered well beloved friends hastening home in the grip of malarial chills or some other equally pernicious fever; or encountered on every street, people clothed in the somber black garb of mourning with the marks of grief and despair deeply impressed on their features; or daily heard the lugubrious tolling of church bells announcing the death of a friend or a relative; or was frequently summoned to attend the last rites to a departed friend laid low by the deadly miasmas of our unsanitized tropical homeland.

However, thanks to William Crawford Gorgas, these days have passed never to return and our tropical home has become one of the world's health resorts.

In the days of ancient Greece, shrines and temples were erected in the mountains and at the Springs of Health in honor of Esculapius, the God of Medicine. To these places of worship and thanksgiving an endless stream of sick and afflicted persons came to offer sacrifices and deposit votive tablets on his altars. And it is a temple such as these

that we will erect here as a living testimonial to the memory of the man who brought so much comfort to the Isthmian family and the tropical world in general.

On this first stone, there will arise a great temple dedicated to this great man and to this shrine of Gorgas will come in a never ceasing pilgrimage, not only our sick compatriots but also the afflicted thousands from other points of the tropics to seek health with undying faith in the name of Gorgas. And they will depart hence for their distant homes, healed and happy, and with tears of gratitude in their eyes and blessing our beloved country and the great and humane work of William Crawford Gorgas, the benefactor of humanity and the redeemer of the Tropical World.

A FRIENDLY CRITICISM

Recently we have received a letter from one of our esteemed members criticising some of the work the Journal is endeavoring to do, which we desire to answer in a public way, and we believe we can remedy the fault if the profession of the state will co-operate with us.

The critic "suggests that the medical meetings be published before they are held. Of course they may be of some interest after they take place, but some of them several months old are history, while some of the meetings with the date, place of meeting and program, might be of some benefit for doctors who might attend the meeting in Iowa."

We have frequently through the columns of the Journal urged the secretaries of the local societies to send us programs and reports of their meetings for publication, but apparently these requests have not been read by the members, and we have been obliged to depend almost entirely on clippings from the clipping bureau, which reach us, often late. In all instances where the secretary or other member sends a report, his name is given; all others which appear without the name of the secretary, are taken from newspaper clippings. An examination of any number of the Journal will show the per cent of secretary reports. The society to which our critic belongs—one of the largest county societies—has never sent us a report, either before or after the meeting. In a few instances of meetings of large district medical societies, we received a program, but generally too late for publication before the meeting is held. We sometimes find in a newspaper a notice that an important meeting is being held today or tomorrow, or a notice that Linn County Medical Society, for instance,

met on Tuesday; sometimes there is a slip pasted to the clipping giving the date of the issue of the paper, then, by reference to a calendar, we are able to figure out the probable date of the meeting.

Even the Austin Flint-Cedar Falls, never send us either a program or an account of the meeting and our publication is always taken from a newspaper clipping; the same is true of the Southeastern Iowa and Southwestern Iowa medical societies. Only by the most urgent request have we been able to get a report of the Polk County meetings; nearly all of the reports have been made by myself when in attendance.

If the medical organizations in Iowa were as enterprising as the Palmer School, conditions would be better. We have no radio connections with the local organizations. We must make an exception of the Wapello County, which once a year—not every year—send us a notice of the year's program.

"Also the personals that would be up to date would be more interesting. I noticed an item of a Des Moines doctor in the Journal, that he is leaving for Europe, when he had been there several weeks and was home already. I only mention this for the good of the society."

We admit all this, this is only one of many instances. In looking over an immense number of clippings, we notice these items, but often there is no date, only that Dr. A. will sail for Europe on Wednesday, but that does not reveal to us the exact date. The clippings are bunched in a large envelope and are sometimes a month or more reaching us, and so we "take the chance," with the feeling that the important thing is that Dr. A. went to Europe.

The most trying thing is in relation to obituaries; only rarely do we get a well written obituary notice. We receive a whole column, sometimes two, of a newspaper clipping, that Dr. W. passed from this life on Friday last and that the entire community was thrown into the most profound sorrow at the untimely demise of a much loved citizen. Then we have a description of the floral gifts; then a long discourse by the Reverend Jones of the..... Church, who reveals the opinion of the Lord touching the work of the deceased brother in the cause of his church and to religion and how in times past he had "held the hand and smoothed ze brow" of the afflicted one, and how the dead friend had become a Knight of Pythias, Elk or Mason. Almost nothing as to his medical relations; all very nice in a newspaper, but hardly

adapted to a medical Journal. After a long struggle to find something about his medical career, we have given up in despair, and, after writing to some presumed medical friend for something we could use, receive another newspaper clipping, but not another word.

After reading this letter of criticism to the end, we fell into a hopeless state of mind when the critic asked us to give him the name of the president of the Iowa State Medical Society.

We should not have had the courage to give this lecture ordinarily, but in answering a well intended criticism, we felt at liberty to write out some of the things we have had in mind for some time, and we cannot escape the thought that some of the grief that has come to the medical profession in late years from the aggressive attitude, and the success of certain schools of medicine, are in some measure, at least, due to the lack of enterprise on the part of organized medicine, leaving a poor lone editor to struggle the best he may with a serious handicap in securing the best information for the use of the medical profession of the great state of Iowa. We would suggest that our critic insist that his secretary carry out the plan he gives voice to and send the proceedings of his society on to me at the earliest date possible; they are worth while I am sure, for he represents a strong profession. The same applies to other societies. We do not feel that the Iowa profession is as fairly represented as it should be, and if our critic will take an active part in this publicity effort to secure better society reports, he will indeed accomplish a wholesome and beneficial task.

The February number of the Journal contains eight society reports, and only one came from the society secretary. In the January number there are eleven society meetings and one reported by the secretary.

The Medical Class of 1893 of the State University will hold a reunion on the thirtieth anniversary of their graduation during the June commencement at the University of Iowa. The dates will be Sunday, Monday and Tuesday, June 3, 4 and 5. Monday, June 4, being alumni day will be the principal day. It is hoped to have every living member of this class present at that time.

Members are requested to communicate with Dr. E. L. Bowman, secretary, Davenport, or Dr. F. E. Boyd, chairman, Colfax, Iowa. The addresses, particularly of Drs. Fred St. Thomas, Augustin J. Greunell and Albert O. Bernays, are desired as well as those of the near relatives of all deceased members
E. L. Bowman, Sec'y., Davenport, Ia.

IOWA STATE UNIVERSITY NEWS NOTES

Don M. Griswold, M.D.

The formal affiliation of Coe College of Cedar Rapids, with the Nurses Training School of the State University of Iowa, has just been completed. Already Des Moines and Drake Universities have affiliated with the training school and other colleges are considering taking kindred steps. According to the arrangements a student may, after completing a certain amount of cultural and preparatory work in these universities or colleges, enter the Nurses Training School and after further training receive a certificate of registered nurse and a degree from the co-operating school.

On December 27, 1922, Miss Carmen M. Post of Des Moines and Mr. Calvin L. Longstreth of Creston were married at Cedar Rapids. Mr. Longstreth is a sophomore in the Medical College of the State University of Iowa. Mr. and Mrs. Longstreth will make their home in Iowa City until the former finishes his medical course.

The annual Alumni Clinic of the College of Medicine of the State University of Iowa was held at Iowa City, January 16 and 17, 1923. It was well attended and over two hundred physicians and surgeons from over the state were there. The clinic started off Tuesday morning with a clinic in head specialties by Dr. L. W. Dean. This was followed by a clinic in oto-laryngology by Dr. Dean, a clinic in general surgery by Dr. Rowan and Dr. Beye and a clinic in neurology by Dr. Van Epps.

Tuesday afternoon clinics were held by Dr. W. F. Boiler in ophthalmology, Dr. Arthur Steindler in orthopedic surgery, Dr. J. B. Kessler in dermatology, Dr. A. H. Byfield in pediatrics, Dr. F. H. Falls in gynecology, Dr. R. A. Fenton in oral surgery, C. C. Bunch in testing of hearing.

Tuesday evening a smoker was enjoyed by the visiting physicians. President Walter A. Jessup gave an address and moving pictures of the Yale-Iowa football game were shown. Other features were added to the entertainment.

Wednesday morning clinics were held by Dr. C. P. Howard, F. J. Rohner, A. C. Davis and W. E. Gatewood in internal medicine. Wednesday afternoon Dr. F. G. Falls held an obstetrical clinic, and gave lantern slide demonstrations of some very interesting gynecological work.

The address of the alumni clinic of the College of Medicine was given Wednesday morning by Dr. J. W. Williams, dean of the college of medicine of Johns Hopkins University, Baltimore, Maryland. His address dealt with some of the problems of the practice of obstetrics met in this country.

The senior students in the Training School for Nurses of the State University of Iowa will this year for the first time receive practical training in

the Psychopathic Hospital on the West Side. Beginning next year two months' training in this hospital will be required before graduation. This practical work will be supplemented by a course in neuropsychiatric nursing by one of the staff members of the Psychopathic Hospital. In some states a certain amount of training in a hospital for nervous and mental diseases is required by law for registered nurses, among them being New York. A knowledge of psychiatry is of undoubted great value in the care of nervous cases. There are very few nursing schools that can offer practical work in such an institution as the Psychopathic Hospital here, for there are not more than two or three institutions of this type in the United States which are connected with educational institutions.

Dr. Frederick H. Falls of the College of Medicine of the State University of Iowa delivered an address at the Times Auditorium in Davenport on the Shepherd Towner bill in its relation to the department of obstetrics of the Iowa University.

Dr. Charles F. Chase of the extension department of the State University of Iowa, spoke before the home department of the Woman's Club at Davenport.

Dr. James C. Kessler of Iowa City was appointed to serve as one of the pension examining surgeons for the U. S. in Johnson county, by the United States Government. Dr. Kessler was of the '06 class of the College of Medicine of the State University of Iowa.

Dr. David Telson, assistant in the department of orthopedics of the State University of Iowa received an appointment in one of the New York City's large hospitals and has left for the new position.

President W. A. Jessup of the University of Iowa has announced that the College of Medicine of the State University of Iowa has been proffered the sum of \$2,250,000 providing the state of Iowa shall meet this sum by a similar appropriation over a period of five years.

This gift of \$2,250,000 comes from the General Education Board and the Rockefeller Foundation jointly at the request of the Iowa State Board of Education and Governor Nate E. Kendall. This is the largest gift ever made to a tax supported institution in the United States.

If this gift is met by a similar appropriation by the state of Iowa it will be used in the assisting of the building and equipping of the hospital and teaching laboratories. In spite of the fact that more than 20,000 state patients mostly children, under the provision of the Perkins law, have been cared for at the University Hospital, still present facilities have become so inadequate that the board has realized that a new and modern plant was a real necessity.

Dr. Abraham Flexner of the General Educational

Board and Dr. George E. Vincent of the Rockefeller Foundation, after having acquainted themselves with the needs of the situation by personal visits sometime ago, stated that they would recommend favorable action by their boards in the assisting of the completing of the plant.

The estimated cost of the completed job is \$4,450,000 and the moment the general assembly accepts the plan, the University can begin work, as the foundation gift will be immediately available.

The new hospital and teaching laboratories will be erected on the beautiful site purchased at the time the Children's Hospital and the Psychopathic Hospital were built. This site is on the west bluff of the Iowa river facing Old Capitol.

Dr. L. W. Dean, dean of the College of Medicine and President Jessup gave short speeches at the Iowa City Rotary Club. Their remarks were devoted entirely to the proffered gift from the Rockefeller Foundation and the General Board of Education.

Dr. Henrietta Calhoun of Rockford, Illinois, has returned to Iowa City for a short visit. While here she attended the Alumni Clinic and was the guest of honor at an informal reception held at the chapter house of the Chi Omega Sorority. Dr. Calhoun was professor of bacteriology at the University of Iowa last year and now is chief of the department of pathology at the Rockford City Hospital.

Dr. L. W. Dean, dean, College of Medicine, State University of Iowa, gave a paper before the Eastern Section of the American Society of Rhinology, Otolaryngology and Laryngology at Providence, R. I. His subject was "The Treatment of Paranasal Sinus Disease in Infants and Young Children."

Dr. Don M. Griswold, professor of preventive medicine and hygiene, recently made an extensive investigation into the outbreak of scarlet fever among the inmates of the State Juvenile Home at Toledo, Iowa.

Dr. Rodney P. Fagen, secretary-executive officer of the State Board of Health, was chairman at the Health Conference, held in Cedar Rapids at the Hotel Montrose, February 14, at the morning session; Dr. Wilbur S. Conkling, state director of the Bureau of Venereal Disease Control, was chairman for the afternoon session; Dr. Jeannette Throckmorton, state lecturer for women, U. S. Public Health Service, Iowa State Board of Health, was chairman for the evening. At this health conference, Dr. Samuel Orton, director, psychopathic department, State University of Iowa, delivered an address on "Mental Hygiene of Adolescence." Dr. Don M. Griswold, director, state laboratories, Iowa City, Iowa, delivered an address on "How Communicable Diseases spread among School Children." Dr. Alcock, associate professor of surgery, State University of Iowa, delivered an address on "Some things

everyone should know about Syphilis." Dr. J. W. Prentice, pediatrician, division of maternity and infant hygiene, State University of Iowa, delivered an address on "Infant Welfare in the Small Town and Rural District."

Dr. Florence Johnston, director, department of maternal and infant welfare, University of Iowa, and Federal Children's Bureau, delivered an address on "Prenatal and Infant Care." Dr. Conkling gave an address on "The Aim of the Conference." Dr. Rachelle H. Yarros, special consultant, U. S. Public Health Service, gave an address on "Venereal Diseases and their Relation to Prostitution."

Dr. Florence White Hark has been appointed to the position of assistant in the department of hygiene and preventive medicine of the State University of Iowa.

Coe College of Cedar Rapids have affiliated with the Nurses' Training School of the State University Hospital in organizing the five-year liberal arts nursing course. This is the third college to make this affiliation.

Dr. Henry Morrow, formerly connected with the Dental College of the State University of Iowa, succumbed to pneumonia, February 14. His death was a shock to his many friends in the University and vicinity.

Among the rare specimens received at the state laboratory, recently was one suspected of leprosy. The lepræ bacilli were not found in the specimen, but the history and clinical aspects of the case will be investigated by the state epidemiologist.

Dr. Lee Wallace Dean, dean of the College of Medicine, State University of Iowa, lieutenant-colonel, has been authorized by the United States War Department, to recruit for the "Iowa Battalion" of the 9th Field Artillery Regular Army, stationed at Des Moines.

Dr. C. P. Howard, professor internal medicine, State University of Iowa, was called to Ida Grove on professional duties, and while there, was a guest of honor at a dinner given at the Hotel Baxton by Dr. G. C. Moorehead, Class '79, State University of Iowa.

Announcement has been received by the senior medics of the State University of Iowa, from Dr. Rodney P. Fagen, secretary-executive of the Iowa State Board of Health, Des Moines, that medical students will be allowed to take their state board examinations at the conclusion of this year's work. Licenses to practice one year as an interne in a hospital approved by the American Medical Association,

will be given to those passing this examination, but license to practice in the state will be withheld until after a year of internship has been completed. The class of '23 is the first class to which this law applies

The patients at the Oakdale Sanitarium have enjoyed several motion picture reels, which were loaned by Mr. "Punch" Dunkel, manager of the Pastime Theater, Iowa City.

Dr. and Mrs. Howard L. Beye announced the birth of a son Friday, February 16. Dr. Beye is assistant professor of Surgery, College of Medicine, State University of Iowa.

Mr. Paul F. Braber, M 1, of Penham, Minnesota, because of excellent work done in anatomical drawings has been asked to assist in the making of drawings for a text-book that is being compiled by members of the staff of the College of Medicine.

Professor Lorle J. Stecher, professor of child welfare and Miss Ruth Washburn, research assistant in the child welfare of the State University, have completed an extensive survey of the mental and motor capacity of the children at the Soldiers' Orphans' Home at Davenport. Tests were made particularly of the youngest children in the home. The tests used have all been originated in the pre-school laboratory of which Prof. Bird T. Baldwin is director.

Dr. Don M. Griswold, department preventive medicine and hygiene addressed the Clinton County Teachers' Institute at Clinton on February 2 on the subject of "Communicable Diseases Among School Children."

Miss Mabel I. Snedaker of the extension department delivered an address before the Clinton County Teachers Institute at Clinton on "Teaching of Health Games."

Dr. and Mrs. Roy Jones who have been visiting friends and relatives in Iowa City, have left for Panama where Dr. Jones is in the government service.

A few of the senior medics of the State University of Iowa have received the announcement of their appointment as internes. Mr. A. Jarod Cone, M4, of Iowa City has received the appointment of interne at the Butterworth Hospital, Grand Rapids, Michigan. Mr. Clayton R. Johnson, M4, of Iowa City has been appointed as interne in the Los Angeles County Hospital, one of the largest hospitals west of the Mississippi.

You will need your 1923 membership card for registration at Ottumwa. Have you paid your 1923 dues to your local secretary?

AMERICAN MEDICAL ASSOCIATION CONVENTION

Why Not Come to the American Medical Association Convention at San Francisco by Water?

The thought is advanced for those fellows of the American Medical Association in the eastern part of the United States that one very pleasant and attractive way to attend the convention in San Francisco, June 25 to 29, is to come by boat from any eastern United States port through the Panama Canal to San Francisco, or come as far as San Diego by boat and make the rest of the trip by train or motor through the beautiful valleys of California.

Details of trips of this kind will be furnished, of course, by any steamship office anywhere, and for those who have the time to spare certainly no more delightful trip could be planned.

It will be easy enough for those who desire to secure their transportation one way by water and the other by rail. A wide latitude in routes crossing the continent will be outlined by any railroad ticket office.

Persons interested in methods of transportation or in any other question whatever character regarding the convention are invited to write to W. E. Musgrave, chairman of the California committee of arrangements, 806-809 Balboa building, San Francisco.

The San Francisco Convention Session of the American Medical Association as a Starting Point for Various Tours

The California Convention Headquarters of the American Medical Association, working with the various tourist agencies, civic and commercial organizations, are arranging plans whereby the San Francisco Convention will be the starting point for a number of tours:

One of those will be a three weeks' trip to Honolulu, on a special boat touching at all of the principal ports, including the Leper Colony, and returning to San Francisco.

Another trip under contemplation is up the West Coast of the United States to Alaska and return, allowing returning passengers to leave the boat at Vancouver and travel over the Canadian Pacific East, or at Seattle over the Great Northern Railroad; at Portland and thence East by a number of lines or to San Francisco and Los Angeles or San Diego and back East by any of the numerous lines; or connecting at San Francisco with boats that will return East through the Panama Canal.

Arrangements are also being planned by which persons may begin an entire Oriental tour, starting from the convention a day or so after its close. These trips will include Japan, China, the Philippine Islands and return to San Francisco, or one may go on through the Suez Canal and Europe.

In fact, any and all sorts of combinations of tours to take up as much vacation as one cares to use and

to any part of the world will be one of the features easily arranged in connection with the convention.

Persons interested in any of these points or in any other matters connected with their trip to California are requested to write W. E. Musgrave, chairman of the local committee of arrangements, 806-809 Balboa building, San Francisco.

Trip No. 1—Twenty-one Days to Hawaii and Return

This trip includes a visit of six days in Honolulu with sight seeing trips to all parts of the city and on the Island of Oahu and two days in Hilo and the Kilauea National Park with a visit by day and night to the famous active volcano of Kilauea National Park. This is the easiest volcano to visit in the world and it alone is worth the trip to the Islands. This is the most beautiful time to visit Hawaii, as the flowering trees and shrubs are all in bloom, vying with each other in their profusion of bloom and riot of color. The cool trade winds continually fan your cheek and the nights are soft and balmy while the water of the ocean ever invites you to revel in its warm embrace.

Trip No. 2—Twenty-four Day Cruise to Alaska

Leaving San Francisco by boat or train for Seattle where a day is spent in sightseeing, proceed from Seattle by boat through the inside passage (one of the most beautiful water trips in the world) calling at Ketchikan, Wrangell, Petersburg, Taku Glacier and Juneau till you arrive at Skagway where you disembark for a railroad trip to Bennett Station and return to catch the boat for Sitka, the quaintest and most interesting city in Alaska. Leaving Sitka, travel for six days through the inside passage till you arrive at Seattle where four days will be spent in a side trip to the beautiful Rainier National Park. Returning to Seattle you embark by train or rail for San Francisco or points east. There are indications that this will be a very big Alaska year so early reservations should be made for this trip.

Trip No. 3—Three Weeks National Park Trip

This trip embraces the Pacific Northwest including Yellowstone, Glacier and Rainier National Parks with a possible optional trip to include Crater Lake National Park. Going east from San Francisco via the famous Feather River Canyon to Salt Lake City where a day will be spent in visiting the Mormon Temple, Saltair and other places of interest, thence to Yellowstone for six days. A trip through the beautiful Flathead Lake Country brings you to Glacier Park for a stay of five days. From Glacier Park proceed to Seattle from where a motor trip will be made to Rainier National Park for a three day stay. Returning to Seattle, we proceed to Portland where we take the wonderful Columbia River Highway drive through the famous Hood River Country. From Portland return to San Francisco via the Shasta Route, stopping en route for a two day's visit to Crater Lake Park.

OTTUMWA HAS DONE HER PART. COME, DO YOURS

Trip No. 4—Four Weeks in the Canadian Rockies

This is the most comprehensive Pacific Northwest Tour that has ever been offered to the lover of the great outdoors.

Leave San Francisco by the Shasta Route for Portland where one day will be spent on the Columbia River Highway drive; you then entrain for Spokane where you will spend the night. Leaving early in the morning you proceed to Kootenay landing thence by boat over the Kootenay and Arrowhead Lakes. The following day resuming the trip by train through the incomparable Canadian Rockies to Banff, where you will spend four days in motoring to all points of interest including Johnson Canyon, Vermillion Lakes, the Valley of the Ten Peaks and Lake Minnewanka.

Motoring from Banff to Lake Louise, you will spend two days at Lake Louise and environs, thence to Emerald Lake and Glacier giving a day to each. From there you proceed to Jasper Park where four days will be spent at the foot of Mount Robson, Canada's Matterhorn.

Proceed from Mount Robson to Prince Rupert, the Western terminus of the Canadian National Railroad. Here you board the steamer for Stewart, seven hundred miles up the inland passage, thence by motor to Hyder, Alaska, an old mining town.

Returning direct to Vancouver by boat, one day will be given to sightseeing, thence to Victoria, "A little bit of England." After two days spent on Vancouver Island, you will proceed to Seattle where you will entrain for San Francisco or the East.

Many trips of shorter duration to Yosemite Valley, Lake Tahoe and other points of interest in California can be made, and we will be glad to furnish information on any of these trips. Inquiries about this or any other subject should be addressed to W. E. Musgrave, chairman California Committee of Arrangements, 808-809 Balboa building, San Francisco.

Why not Motor to the American Medical Association Convention at San Francisco, June 25 to 29?

Many motorists in single cars, small parties and motor caravans from various parts of the United States are already in correspondence with the California headquarters of the convention.

California is the motorists' paradise. Any part of the state is now easily accessible from anywhere. For those interested in this form of travel nothing could be more delightful than to combine vacation and pleasure by coming from anywhere to the American Medical Association Convention by motor.

There are four main transcontinental motor road arteries from Eastern and Midwestern states to California. The Lincoln Highway alone will be traveled by more than 60,000 cars this year. This is the most direct route from New York and Chicago to San Francisco. It passes through Omaha, Cheyenne, Salt Lake City and Reno.

The National Old Trails route is through Kansas City, Trinidad, Colorado, Albuquerque, New Mexico,

Flagstaff, Arizona, Needles, Los Angeles and San Francisco.

The Yellowstone Trail is from Chicago through Milwaukee, Minneapolis, Aberdeen, across Montana, Idaho, and into Seattle, or Portland via Spokane or Pendleton and thence down the West Coast into California.

Victory Highway makes good California connections from Denver through Salt Lake City. Salt Lake City is the key position between coast cities and most of the main motor arteries from the Eastern and Midwestern states. From Salt Lake City motorists can turn north through Pocatello, Idaho, Boise and Walla Walla to Portland and thence south over splendid boulevard roads into California, or one can turn south at Salt Lake and follow the Arrowhead Trail through Provo, Beaver, St. George, Las Vegas, to the National Old Trail at Goffs and into Los Angeles and thence to San Francisco.

There are other good routes leading to the coast and into California. Once in the state of California, the motorist encounters a veritable net work of splendid roads leading to all cities and points of interest. If you are interested in this method of transportation to the convention write for any information or help of any character.

Address communications to Dr. W. E. Musgrave, California headquarters 1923 American Medical Association Convention, 806-9 Balboa building, San Francisco.

Rates and Routes of Transportation to San Francisco and Return

The American Medical Association is advised that effective May 15 and daily thereafter until September 30, western railways will place on sale round trip tickets to San Francisco with a return limit of October 31. These tickets will permit stopovers at any point on the going or return trip merely by informing the conductor at which points passengers desire to stop. Rates from the cities named are: From Chicago, \$86; from Kansas City, \$72; from St. Louis, \$81.50; from Omaha, \$72; from St. Paul, \$87.50.

Pullman rates from Chicago are: Lower berth, Chicago to San Francisco, \$23.63; upper berth, Chicago to San Francisco, \$18.90; compartment, Chicago to San Francisco, \$66.75; drawing room, Chicago to San Francisco, \$84.

If stopovers are made on the outward trip, a small additional sum is to be added to the Pullman rates quoted.

Lines east of Chicago made low rates to the Pacific Coast and return in the summer of 1922, and it is thought that such rates will be announced for the summer of 1923.

Those who go to San Francisco from Chicago have the choice of a large number of routes, some of which are as follows:

1. C. B. & Q. Railroad to Denver; D. & R. G. W. Railroad to Salt Lake; Western Pacific or Southern Pacific Railroad to San Francisco.
2. Rock Island Railroad to Denver; D. & R. G.

W. Railroad to Salt Lake; Western Pacific or Southern Pacific Railroad to San Francisco.

3. C. & N. W. Railroad to Omaha; Union Pacific Railroad to Ogden; Western Pacific or Southern Pacific Railroad to San Francisco.

4. C. B. & Q. Railroad to Denver; Union Pacific to Ogden or Salt Lake; Western Pacific or Southern Pacific Railroad to San Francisco.

5. C. B. & Q., Rock Island, or C. & N. W. and Union Pacific Railroad to Denver; D. & R. G. W. or Union Pacific Railroad to Salt Lake; Union Pacific to Los Angeles; Southern Pacific to San Francisco.

6. Santa Fe Railroad to Los Angeles; Southern Pacific Railroad to San Francisco.

7. Rock Island Railroad to El Paso; Southern Pacific Railroad to Los Angeles; Southern Pacific Railroad to San Francisco.

8. I. C. Railroad to New Orleans; Southern Pacific Railroad to Los Angeles; Southern Pacific Railroad to San Francisco.

Going by any of the above named routes, passengers may return the same way or by any of the following routes, without additional charge:

1. Southern Pacific Railroad to Los Angeles; Santa Fe (Grand Canyon Route) to Chicago.

2. Southern Pacific Railroad to Los Angeles and El Paso; Rock Island Railroad to Chicago.

3. Southern Pacific Railroad to Los Angeles; Southern Pacific to New Orleans; I. C. Railroad to Chicago.

4. Southern Pacific Railroad to Los Angeles; Union Pacific to Salt Lake; D. & R. G. W. Railroad to Denver; C. B. & Q., Rock Island Railroad or any direct line to Chicago.

5. Southern Pacific to Los Angeles; Union Pacific Railroad to Ogden; Union Pacific to Omaha; C. B. & Q., C. & N. W., or C. M. & St. P. Railroad to Chicago.

6. Southern Pacific Railroad to Los Angeles; Santa Fe (Grand Canyon Route) to Denver; any line to Chicago.

Those who wish to return from San Francisco by way of Portland, Seattle and the North Pacific Coast will be required to pay \$18 additional to the rates quoted, and tickets may be secured to read returning from San Francisco by the following routes:

1. Southern Pacific Railroad, San Francisco to Portland; Northern Pacific (Yellowstone Park Route) to St. Paul; any line to Chicago.

2. Southern Pacific Railroad, San Francisco to Portland; Great Northern (Glacier Park Route) to St. Paul; any line to Chicago.

3. Southern Pacific Railroad, San Francisco to Portland, S. P. & S. Railway to Spokane (Columbia River Route); Northern Pacific or Great Northern to St. Paul; any line to Chicago.

4. Southern Pacific to Portland; Northern Pacific, Great Northern or Union Pacific Railroad to Seattle; Great Northern or Canadian Pacific Steamship Company to Vancouver; Canadian Pacific Railroad to St. Paul; any line to Chicago.

5. Southern Pacific Railroad, San Francisco to Portland; Union Pacific Railroad to Ogden or Omaha; any line to Chicago.

6. Southern Pacific Railroad, San Francisco to Portland; Union Pacific Railroad to Salt Lake; D. & R. G. W. Railroad to Denver; any line to Chicago.

Any who wish to go to San Francisco and then to Los Angeles and return to San Francisco, Portland, Seattle and North Pacific Coast points will be required to pay \$11.40 additional, besides the \$18 required for the return trip by the northern routes.

An Invitation from the New Mexico Medical Society

The annual meeting of the New Mexico Medical Society will be held in Albuquerque, June 19-21. The local committee of arrangements for that meeting and the secretary of the New Mexico Medical Society cordially invite Fellows of the American Medical Association going to the annual session in San Francisco to stop over at Albuquerque. Entertainment will be provided for them by the local committee of arrangements and the Chamber of Commerce of Albuquerque. Parties on special trains en route to San Francisco are invited to arrange their schedules so that at least one day may be spent at Albuquerque. Dr. J. W. Elder, secretary of the New Mexico Medical Society, extends for that society an invitation to the members and Fellows of the American Medical Association to spend as much time as can be arranged at Albuquerque during the meeting of his state medical society.

Special Train to San Francisco

The "Medical Special De Luxe"—The Harlan Tours, 202 South State Street, Chicago, will operate a special train to be known as the "Medical Special De Luxe," which will leave Chicago on the evening of June 16 and Minneapolis over the Soo Line on the morning of June 17. Special Pullman cars will be operated from Des Moines, St. Louis and Omaha, and will be attached to the special at St. Paul. Stops will be made at Banff, Lake Louise and Glacier in the Canadian Rockies, and interesting side trips have been arranged. Other stops will include Victoria, Seattle and Portland. One full day is to be spent on a steamer between Vancouver and Seattle, while at Portland the famous Columbia River Highway trip is planned. This train will arrive in San Francisco on Monday, June 25, but any members of the House of Delegates who may be on board will reach San Francisco on Sunday evening, June 24. Two return routes are offered, one overland direct, and the other leaving San Francisco on Friday, June 29, by way of the Big Trees, Santa Cruz, Del Monte, Santa Barbara, Los Angeles, Pasadena, Catalina Island, Salt Lake City, the Grand Canyon of the Arkansas, the Royal Gorge and Colorado Springs. In addition to this special train, the Harlan Tours will operate special cars overland direct to San Francisco, and tours by way of the Canadian Rockies and the Shasta Route, which will arrive in San Francisco before the beginning of the session. Reservations, information

as to rates and schedules, and descriptive matter may be secured by addressing the Harlan Tours, 202 South State Street, Chicago, or L. H. McCormick, General Agent of the Rock Island Lines, Chicago.

SOCIETY PROCEEDINGS

Audubon County Medical Society

The Audubon County Medical Society held their regular meeting at Kimballton on December 1. Among the business transactions was the selection of officers for the coming year. R. A. Jacobsen of Exira was elected president, W. H. Halloran of Audubon, vice-president; R. F. Childs of Audubon, secretary-treasurer. Dr. A. L. Brooks and Dr. Roy Jensen were elected delegates to the state convention.

Drs. J. M. Fulton, W. T. Webb and J. M. Soper were the new members elected to the county association. During the meeting the following resolution was adopted:

Be It Resolved: We, the members of the Audubon County Medical Society, indorse the work of the Christmas Seal Organization and respectfully ask the support of this organization by every person in Audubon County.

The members of the Association were guests of Dr. P. Soe at the noon hour.

Boone County Medical Society

Boone County Medical Society met in Boone, January 4, 1923. The following officers were elected: Dr. R. Shane, Pilot Knob, president; Dr. G. H. Stanger, Boone, vice-president; Dr. C. A. Nolan, Boone, secretary-treasurer; Dr. A. B. Deering, Boone, delegate to State Medical Society; Dr. M. C. Jones, Boone, alternate. Community Activities Committee: Dr. J. A. Ganoe, Ogden, chairman; Dr. N. M. Whitehill, Dr. C. A. Nolan.

Boone County Medical Society

The Boone County Medical Society was host at a 6:30 o'clock dinner at the Hotel Holst to a large company, including members and their ladies and other invited guests.

Dr. R. S. Shane of Pilot Mound, the president of the society, presided at the gathering while Dr. G. H. Stanger, the vice-president acted as secretary of the meeting in the absence of Dr. C. A. Nolan, the society's secretary. Every other member of the organization was present.

An interesting program had been prepared for the evening by the committee on arrangements, Dr. N. M. Whitehill and Dr. M. C. Jones. The speaker of the evening was Senator Frank Shane of Ottumwa, members of the fortieth general assembly, who is a brother of Dr. Shane of this county. Sen. Shane talked on legislation pending in Des Moines and discussed the Shepard-Towner bill.

Senator Chas. Olson and Representative W. S.

Criswell of this county were also guests of the meeting and the latter gave a talk on how laws are passed in the house.

Forty-seven were present at the gathering. Miss Case and Miss Thie of Eleanor Moore County Hospital staff and Miss Emma B. McCall, county nurse, being among those invited.

A picnic of the society next summer will be planned by a committee consisting of Drs. L. A. Bassett and W. G. Laidley.

Calhoun County Medical Society

Rockwell City physicians gave a dinner for the Calhoun County Society on December 21st, after which in evening session, papers were presented by the retiring president, Doctor Kauffman, on Medical Education, and the retiring secretary, Doctor Beach, upon the Work of the Women's Reformatory Since its Opening. A silver vase was presented to Doctor Beach in token of appreciation of her work as secretary. She went to the Minnesota Reformatory at Sauk Center, a larger institution, on January first. The following officers were chosen for the year 1923: Dr. L. E. Eslick, president; Dr. Warren McCrary, vice-president; Dr. P. W. Van Metre, secretary and treasurer. Dr. D. J. Townsend, delegate and Dr. F. E. Kauffman, alternate. Plans were laid for a mid-winter, inter-county meeting at Rockwell City.

Carroll County Medical Society

The Carroll County Medical Society met December 28 in Carroll. A supper was served in the Subway cafe at six o'clock, after which the doctors went to the council chambers in the city hall for the annual meeting.

Dr. Wayne M. Shirley read a paper on Renal Efficiency Tests. At the election of officers Dr. C. E. Wolfe of Coon Rapids was chosen president; Dr. A. Kessler, vice-president; Dr. Jessie Hudson, secretary and treasurer; Dr. A. J. Beyer, censor.

Dr. S. D. Martin retired as president, but will represent the county at the meeting of the State Medical Association in Ottumwa. Dr. O. W. Wyatt of Manning was chosen alternate delegate.

Cass County Medical Society

Cass County Medical Society met at Atlantic Wednesday afternoon, January 31, 1923. Members present: Earl C. Montgomery, Jr., C. G. Clark, R. L. Barnett, H. A. Johnson, Atlantic; Drs. C. C. Gibson, Lewis and W. F. Stults of Wiota.

Program: Report of cases, Dr. W. F. Graham, Atlantic, Dr. Stults' reported on two epidemics of diphtheria 1922 and 1879, which led to a free discussion.

President, Dr. Earl Montgomery; secretary, Dr. M. Stults. M. Stults, M.D., Sec'y.

Hamilton County Medical Association

The Hamilton County Medical Association met January 17 in the Chamber of Commerce rooms. There was a fair attendance. A considerable amount

of professional and routine business was disposed of. The next meeting will be held in two weeks.

Jasper County Medical Association

At the meeting of the Jasper County Medical Association meeting held at the Skiff Memorial Hospital in Newton Monday evening, January 15, the following officers for the coming year were elected: Dr. R. W. Woods, Newton, president; Dr. W. E. Anspach, Colfax, vice-president; Dr. W. E. Lyons, Newton, secretary-treasurer.

All greatly enjoyed the paper given by Dr. J. W. Martin on The Significance of Abdominal Pain, from a Surgical Standpoint. Drs. R. G. and W. E. Anspach of Colfax were present at the meeting.

Marshall County Medical Society

Dr. C. R. Howard, professor of internal medicine at the State University of Iowa, addressed members of the Marshall County Medical Society on Aneurism of the Thoracic Aorta, at a meeting at the Chamber of Commerce. Dr. Wood of State Center, discussed an unusual case he has been treating. Twenty-five doctors attended and dinner was served at 6:30.

Mills County Medical Society

The Mills County Medical Association met December 7. Dr. Edgar Christy of Hastings was re-elected president for the coming year and Dr. Malcolm Campbell of Malvern, secretary. Arrangements were made for a meeting at Malvern in February, when the matter of a county hospital will be discussed.

Resolution Passed at the Meeting of the Polk County Medical Society Held at Des Moines, February 27, 1923

Resolved, That it is the sense of the Polk County Medical Society that the public welfare and the interests of medical science demand that a state and nation wide campaign for the popularization of genuine medical knowledge, and the principles which govern trustworthy and ethical methods of practice of the art of healing be undertaken; and that the Committee on Public Health and Legislation of this Society is hereby instructed to enlist the services and cooperation of the Council of the Iowa State Medical Society, and through the latter organization the American Medical Association in a state and nation wide movement for public instruction in the fundamental facts of modern medical practice to the end that the public may be protected from the stupendous frauds of modern cults, and the interests, dignity and high ideals of the profession of medicine preserved.

Signed:

W. E. Sanders,
J. F. Auner,
J. W. Martin,
Committee.

Poweshiek County Medical Society

The mid-winter meeting of Poweshiek County Medical Society was held December 21 in Grinnell at the offices over the Candyland. A six o'clock dinner was served at the Country Club, and then adjourned downtown for the business meeting. Dr. N. G. Alcock of Iowa University presented a paper as the main number of the program. Drs. E. J. Ringena, C. D. Busby and Fred Sinal of Brooklyn were the out-of-town doctors attending the meeting.

Scott County Medical Society

Scott County Medical Society met at the Chamber of Commerce, November 7, 1922. Dr. Speed Kellogg of Chicago read a paper on appendicitis.

Election of officers: Dr. W. E. Foley, president; Dr. L. E. Shafer, vice-president; Dr. S. G. Goenne, secretary; Dr. S. G. Hands, treasurer.

Scott County Medical Society

Scott County Medical Society met at Davenport Chamber of Commerce January 2, 1923. The scientific program was a paper on Skin Diseases by Dr. B. Barker Beeson of Chicago, Illinois.

The new officers for the year were installed. Dr. W. E. Foley, president; Dr. W. C. Goenne, secretary, and Dr. S. G. Hands, treasurer.

A committee to get distribution of Hygeia throughout the county was appointed. This committee was also designated to look after any proper publicity for scientific medicine. The committee appointed consisted of Dr. John I. Marker, Dr. J. E. Rock and Dr. W. A. Stoecks.

John I. Marker, Sec'y.

Woodbury County Medical Society

At the annual election of officers December 7 at the West Hotel Dr. Victor Brown was elected president of the Woodbury County Medical Association. Other officers elected are Dr. John Thompson, vice-president, and Dr. Arch Donohue, secretary and treasurer.

Dr. L. J. Townsend and Dr. J. E. Swanson were named as delegates to the Iowa State Medical Association Convention at Ottumwa, in May, 1923. Alternates named are Dr. A. J. McLaughlin and Dr. E. A. Jenkinson.

The association also endorsed the county unit plan as presented by Dr. J. W. Wallace of New York who is connected with the Rockefeller Foundation. This plan was also endorsed by the members of the staff of the St. Vincent's Hospital at a meeting held Monday evening.

Iowa Clinical Medical Society

Iowa Clinical Medical Society at Mason City February 24, 1923. Dr. R. L. Woodward, Dr. J. C. Shellito of Independence, Drs. George M. Crabb, C. E. Dakin, V. A. Farrell and N. C. Stam appeared on the program with papers and discussions.

Those who attended today were: Dr. J. C. Shelito, Independence; Dr. F. G. Murray, Cedar Rapids; Dr. F. H. Lamb, Davenport; E. S. Evans, Grinnell; Dr. C. Van Epps, Iowa City; Dr. J. W. Rountree, Waterloo; Dr. F. J. Rohner, Iowa City; Dr. W. E. Gatewood, Iowa City; Dr. L. A. Hopkins, Grinnell; Dr. F. A. Ely, Des Moines; Wm. H. Rendleman, Davenport; Geo. W. Koch, Sioux City; C. A. Waterbury, Waterloo; Russell C. Doolittle, Des Moines; Dr. V. A. Farrell, Mason City; Dr. L. R. Woodward, Mason City.

Iowa and Illinois Central District Medical Association

The Iowa and Illinois Central District Medical Association mid-winter meeting was held at the Blackhawk Hotel, February 15. More than sixty physicians and surgeons of the Tri-Cities and vicinity heard Dr. H. W. Woltmann of Rochester, Minnesota, and Drs. A. J. Tierney, and Leo Caplan of St. Louis.

The three talks on medical subjects featured the evening. They followed dinner which was served in the grill room.

Dr. Woltmann gave an illustrated talk on Neurological Analysis. Dr. Tierney spoke on Endocrinology, and Dr. Caplan spoke on Surgical Treatment of Tri-Facial Neuralgia.

Upper Des Moines Medical Association

Members of the Upper Des Moines Medical Association met for the winter meeting Tuesday, January 14, at Emmetsburg. Forty physicians from Palo Alto, Clay, Emmet and other counties were present at this meeting over which Dr. Hennessey of Emmetsburg presided. The meeting was held in the library and several papers and addresses were given.

In the evening a banquet was served in the dining room of the Masonic hall. The menu was a most elaborate one and besides the doctors was enjoyed by a number of their wives who accompanied their husbands to Emmetsburg for the occasion.

Dr. E. E. Munger of Spencer read a paper on the prevention of disease. He called special attention to the stamping out of yellow fever, typhoid, malaria, diphtheria and other malignant diseases. Because of medical achievements the average length of life has been increased several years and there has been a great reduction in infant mortality. Dr. Munger urged that greater organization and activity be made among people in order that the benefits of medical science may become more general. Dr. Munger recommended the establishment of county hospitals which would be a benefit to all people in the county.

Dr. Donohue, superintendent of the Iowa Hospital for the Insane at Cherokee, was also a speaker on the program. He spoke chiefly along the lines of his work and suggested a number of changes in the laws of the state which would benefit the patients in his

care and in the care of life hospitals and physicians.

Another speaker was Dr. Sampson of Creston who spoke in favor of the building of county hospitals in the state.

New officers for the association were chosen as follows: President, Dr. Hennessey of Emmetsburg; vice-president, Dr. Rust of Webb; secretary-treasurer, Dr. Brereton of Emmetsburg.

The summer meeting of the Association will be held at Okoboji.

Clinical Congress of the Iowa and South Dakota Sections of the American College of Surgeons

The Clinical Congress of the Iowa and South Dakota Sections of the American College of Surgeons, which ranks with the Royal College of Surgeons, England, as one of the world's greatest medical organizations will be held in Council Bluffs today and tomorrow. One of the chief features of the congress will be a mammoth public mass meeting, which will be held in the auditorium of a local church. Among those scheduled to speak are included such well known men as Dr. Franklin H. Martin, M.D., director general of the American College of Surgeons; Dr. Allen B. Kanaval of Chicago, the eminent cancer diagnostician, Dr. Charles B. Reed, one of the foremost obstetricians of the country; Dr. Carl A. Hamann, a renowned cancer specialist, and Dr. Allen Craig of Chicago, another world famous obstetrician.

These surgeons will talk on some of the more common preventable diseases which are taking an unprecedented and totally unnecessary loss of life.

Twin Lakes District Medical Society

At a meeting of six county medical societies, Calhoun, Carroll, Greene, Pocahontas, Sac and Webster, in a mid-winter inter-county session held at Rockwell City, Iowa, on January 18, seventy-six physicians attended and participated in a scientific program on Iowa Medical Practice in Nineteen-twenty-three.

Papers were presented as follows:

Skin Disease, the Terra Incognita of the General Practitioner, C. R. Whitney, Fonda.

Are We Responsible for Christian Science and Coue? L. M. Munson, Ft. Dodge.

The Small Hospital, G. W. Franklin, Jefferson.

Some Points in Retrospect on Forty Years' Obstetric Practice, D. J. Townsend, Lohrville.

The First Two Inches of the Duodenum, J. F. Studebaker, Ft. Dodge.

Some Notes on the Newer Treatment of Diabetes, E. E. Speaker, Lake View.

The Well Child, Benj. C. Hamilton, Jr., Jefferson.

Kidney Efficiency, W. M. Shirley, Carroll.

Synopsis Dean Dodson's Preventive Medicine and the General Practitioner, T. B. Herrick, Manson.

Gastric and Duodenal Ulcer, A. W. Patterson, Fonda.

Cooperation between Physicians Versus Group Practice, F. H. McCray, Schaller.

After a banquet, donated through the generosity of the Rockwell City Chamber of Commerce had been served by the ladies of the Eastern Star at the spacious dining room of the Masonic Hall, Robert Evans of Fort Dodge, acting as toastmaster, introduced Mrs. J. H. Hovedon of Laurens who read the sentiment appearing on the place cards which were the compliments of the Women's Reformatory, Dr. Eleanor Hutchinson, superintendent:

"There are men and classes of men that stand above the common herd: the soldier, the sailor and the shepherd, not infrequently; the artist rarely; rarer still the clergyman; the physician, almost as a rule. He is the flower (such as it is) of our civilization; and when that stage of man is done with and only to be marveled in history, he will thought to have shared as little as any in the defects of the period and most notably exhibited the virtues of the race. Generosity he has, such as is possible to those who practice an art, never to those who have a trade; discretion tested by a hundred secrets; tact tried in a thousand embarrassments; and what are more important, Herculean cheerfulness and courage. So that he brings air and cheer into the sick room, and often enough, though not so often as he wishes, brings healing."—Robert Louis Stevenson.

L. H. Jones of Wall Lake then responded to the toast: The First Hundred Years are the Hardest, and proved his point to the satisfaction of his hearers who seemed to approve. C. J. Saunders of Fort Dodge, president of the Iowa State Medical Society, was next called upon to talk upon Iowa Primary Roads Fifty Years Ago. L. G. Patty of Carroll made some sensible remarks, responding to the toast: More Every Day Stuff but not Coue-koo, which concluded the toast program.

A special committee, composed of members from each of the six county societies, which had met in the interim between meetings, was then called upon to report on plans for a permanent organization of a Twin Lakes District Medical Society. They reported that Rockwell City had been selected as the permanent place of a mid-winter meeting to be held each January and that the county society program committees were to arrange and provide the programs. The following officers were chosen: L. G. Patty, Carroll, president; W. R. Bates, Fort Dodge, vice-president, and P. W. Van Metre, Rockwell City, secretary.

The dominant note of the discussion of the afternoon program, seemed to be the necessity of the profession awakening to the need of preventive medicine. Another matter given especial emphasis was that there is a possibility of the Iowa legislature failing to accept the proffered gift of the Rockefeller Foundation and General Education Board to the state's medical college. Members were urged to use every possible means to secure the acceptance of this gift.

P. W. Van Metre.

MEDICAL NEWS NOTES

At the meeting of the board of supervisors, a proposition by the Plymouth County Medical Society to doctor the poor and indigent in the county for \$2500 per annum, was rejected by the board. The board has issued a notice asking for bids for the care and doctoring the poor which was opened at a meeting held on January 18, 1923.

Members of the Woodbury County Medical Society unanimously approved of the project to establish a municipal clinic in Sioux City, at a meeting held at the West Hotel.

The committee, which has completed a survey of the project, was authorized to assist city officials in establishing the clinic.

Mayor Short, who attended the meeting, declared that the municipal clinic is now practically assured.

Dr. B. Barker Beeson, assistant professor of skin diseases at the Chicago Polyclinic and the Loyola University, addressed the physicians and surgeons on the subject, Some of the Common Skin Diseases.

January 5 is the one really big day of the year among medical men of Northeastern Iowa, and January 5, 1923, is no doubt the biggest one since this date began to be celebrated in Waverly several years ago. It is the anniversary of the birth of Dr. W. A. Rohlf of this city, and he always observes the event by holding a clinic at Mercy Hospital, winding up the day with a big banquet.

The following eminent physicians were present and took part in the clinic lectures:

Dr. C. W. Hopkins, Chicago; Dr. J. R. Buckbinder, Chicago; Dr. Jennings Crawford, Dr. N. G. Alcock, Iowa City; Dr. C. P. Howard, Iowa City; Dr. H. J. Prentiss, Iowa City; Dr. J. F. Auner, Des Moines. There were thirty clinical cases, of which twenty were surgical cases, most of them being major operations.

Drs. J. F. Auner of Des Moines, and Dr. J. E. Brinkman of Waterloo, were the toastmasters. A huge birthday cake, made by Mrs. J. Y. Hazlett and Mrs. W. A. Rohlf, and decorated by the Waverly Baking Company, bearing fifty-six candles, was the signal of all to stand and sing "Auld Lang Syne," after which Dr. Rohlf was called upon to make a speech. This rather got under the doctor's skin and for a time he was non-plussed, but he soon rallied and made the best speech he has ever made.

The following responded to toasts: Dr. C. W. Hopkins, Chicago; Dr. F. A. Ely, Des Moines; Dr. W. W. Bowen, Ft. Dodge; Dr. C. P. Howard, Iowa City; Dr. H. J. Prentiss, Iowa City, Dr. N. G. Alcock, Iowa City, and Major Sanford, commander of the hospital at Colfax, Iowa.

HOSPITAL NOTES

Wednesday, January 3, there was celebrated at Mercy Hospital, Anamosa, the twenty-fifth anniversary of Sister Mary Genevieve, as a member of the order of the Sisters of Mercy. There were gathered there two Sisters from each of the many missions of that order and her immediate family. A solemn mass was celebrated in commemoration of the occasion and a banquet was served by the nurses at the noon hour.

Sister Mary Genevieve Fay is an Anamosa girl, a sister of Postmaster M. Fay, Mrs. Fogarty and Miss Agnes Fay.

Colfax Hospital to Close Immediately

Colfax government hospital will be discontinued at once, according to telegraphic word from Washington, D. C.

Dr. J. E. Dyer, head of the Colfax institution, has received instruction to transfer the thirty men under treatment at Colfax to Knoxville or other government hospitals. The hospital at Colfax has been operated for two years.

Financial Report Ottumwa Hospital for Year of 1922

Receipts from all sources, \$59,078.61. Amount borrowed for maintenance during year \$2,000.

The hospital is a financial benefit to the community in the following respects:

Of the \$58,891.98 spent by the hospital in 1922, \$50,620.84 was distributed among the people of Ottumwa. Of the 1,230 patients cared for in the Ottumwa hospital, 535 pay patients were from out of the city.

A hospital is valuable to the community in supplying nurses. The Ottumwa hospital has graduated 109 nurses.

Thirty-four graduates are now in active service here; twenty nurses served during the world war; twelve of these were in service overseas.

The hospital is second only to the church in its service to humanity.

The charity work done by the hospital in 1922 amounts to \$10,482.77.

The Ottumwa hospital supplies three free clinics, one is for babies where mothers may learn how to feed and care for the little ones and put them in the hospital if their condition requires it.

Endowments for this purpose have made a part of this charity possible, but the greater part is carried by the hospital. No greater memorial could be made than as endowment to the hospital, for this memorial carries on the good work of the individual or organization for generations and assures the community a permanent hospital.

Our indebtedness has increased during the year \$1,500, but that increase is small compared to the large amount of charity done and the decrease in our subscriptions.

The subscription last year to the Ottumwa Hospital was about \$3,800. We need \$6,000 to meet our budget.

Dr. C. F. Starr was re-elected as president of the Park Hospital at the directors' meeting. This meeting followed a stockholders' meeting, when the following directors were chosen: Dr. George Crabb, Dr. C. F. Starr, Dr. W. E. Long, Dr. C. E. Dakin, and Dr. H. D. Fallows, secretary.

Other officers elected by the directors were Dr. W. E. Long, vice-president; Dr. C. E. Dakin, treasurer and Dr. H. D. Fallows, secretary.

Thursday, January 11, was the 100th anniversary of the birth of Louis Pasteur, eminent French chemist. The event was celebrated by the medical staff of Mercy Hospital, Davenport, Thursday evening at which the nurses were guests, and the event is hereafter to be celebrated every year.

Dr. F. H. Lamb in an interesting talk on the life of Pasteur and his work designated him as the greatest material benefactor to mankind the world has seen and told of his successful experiments on the souring of milk, proved to be due to the presence of bacteria; his use of an antitoxin as a preventive and cure of rabies; and other valuable contributions to medical science.

The hospital staff of Jane Lamb Hospital is made up of the following doctors: President, Dr. H. R. Sugg; vice-president, Dr. C. T. Bigelow; secretary-treasurer, Dr. B. C. Knudsen.

Other members of the staff: Dr. M. S. Jordan, Dr. A. W. Blunt, Dr. C. W. Brown, Dr. L. K. Fenlon, Dr. H. J. Heusinkveldt, Dr. F. O. Kershner, Dr. John Mansfield, Dr. Grace Schermerhorn, Dr. W. M. Waliker, Dr. E. P. Weih, and Dr. D. T. Nicoll.

Dr. Sara E. Foulks has received a request by wire from the American Women's Hospital Association that she leave at once for hospital service in Greece, and is arranging her affairs so as to leave and sail from New York. She has been granted leave of absence from the Davenport Hospital of which she has been superintendent for some time.

Dr. Foulks spent several months in Albania in hospital work in 1919, working under the auspices of the Red Cross, and the call to go to Greece in the present emergency over there is a recognition of her fine record made on her previous tour of service over there.

Plans for increasing the capacity of the County Public Hospital, also known as the Pine Knoll Sanitarium, by the building of a new addition containing quarters for thirty additional beds together with a diet kitchen and separate quarters for the nurses are being prepared by the trustees to meet an increasing

demand, according to an announcement made at the annual meeting of the board.

Officers of the new Samaritan Hospital, Sioux City, were authorized to begin financing a \$250,000 building at Twenty-ninth street and Pierce street extension.

Authorization was given at a special meeting of the hospital corporation members and directors held in the Security bank building. According to E. J. Stason, president of the association, the members were in full accord on the proposal to build.

Mr. Stason explained that the officers, in complying with instructions, will execute a trust deed on bonds in the amount of \$150,000 on the property owned by the hospital corporation. The bonds will be paid as the property of the hospital is sold from time to time.

Among the property belonging to the corporation are farms and city real estate valued at \$100,000, which was donated to the institution by M. C. Davis.

This \$100,000, together with approximately \$50,000 raised during a campaign several years ago, plus \$50,000 which friends are expected to give, will make it possible to erect a \$250,000 institution without the least difficulty, Mr. Stason said.

It was pointed out at the meeting that the need for more adequate hospital facilities is serious in Sioux City. The present hospital at Seventeenth and Pierce streets is crowded to capacity.

Plans will be rushed by architects in order that construction may begin as soon as weather conditions permit.

PERSONAL MENTION

Dr. and Mrs. Paul Stookey, who have been in Austria and other foreign countries for some time while Dr. Stookey was continuing his medical studies, arrived in Leon Sunday, having landed in New York the previous Monday. They will visit here for about a week and then go to Kansas City, Missouri, where Dr. Stookey will engage in practice.

Speaker Anderson of the House of Representatives of the Iowa Legislature has named Page county's representative, Dr. T. E. Powers, on six important committees. Dr. Powers is named as next to the chairman on the Committee of Public Health, of which Representative Elliott is chairman. It is not usual to name as chairman of any committee a man serving his first term, the members who have been there before being given preference, by reason of service. Dr. Powers is named on the important committees of appropriations, board of control, municipal corporations, county and township organizations and fish and game, in addition to being the second member of the board of health. In the State Senate, our Senator C. A. Rees is likewise honored, being chairman of the committee on land titles, and a member of the committee on agriculture, highways, insurance, fish and game, board of control, pharmacy, and congressional districts.

Dr. Thomas Bentley Throckmorton was down from Des Moines recently, attending the Masonic school of instruction, and calling at the parental home and on old friends. The doctor has become one of the well known and successful practitioners of the capital city, but in spite of the fact he is an extremely busy man he has never grown away from his native affability.—Chariton Leader.

Dr. C. F. Schumate of Dumont has taken the practice of Dr. Armstrong of Miles, who has moved to Preston.

Dr. E. W. Sproule of Peterson has located in Humboldt.

OBITUARY

Charles R. Whitney, M.D., of Fonda was found dead on the street on the evening of February 14, 1923. Except for a short illness in the fall of 1921, after which he rested for a time, he had attended to his professional duties every day, in fact he was returning from a call when stricken.

Dr. Whitney was born in Moore County, Minnesota, June 14, 1864. With his parents he came to Pocahontas county in 1870. He was a graduate of the Western Normal at Shenandoah in both the



DR. CHARLES R. WHITNEY

normal and scientific departments. In 1894 he graduated from Rush Medical College, Chicago, and in the following year began the practice of medicine in Fonda. During the first year, he was associated with Dr. M. F. Patterson, and then became his successor.

On September 15, 1896 he married Miss Lillian Higgs of Storm Lake, who, with one son, Dr. Homer Whitney of Chicago, survives him.

Dr. Whitney became a member of the Methodist church in 1885, and remained a faithful, consistent and devoted member until death called him. He was also a member of the Masonic and Woodman fraternities. He was a member of the Pocahontas County Medical Society, the Iowa State Medical Society, and the American Medical Association.

In the passing of Dr. Whitney the medical profession loses an active, efficient, and conscientious

member; the community, a citizen who always took an active part in whatever tended towards the betterment of conditions; his family, a loving and devoted husband and father. Strong in his convictions, he always was fair to those who might differ with him. The people whom he served professionally during the twenty-eight years of his residence in Fonda, trusted him implicitly as an ideal physician and faithful friend.

Six neighboring physicians acted as pall bearers at the funeral which was held on February 17, and which was very largely attended.

BOOK REVIEWS

CLINICAL MEDICINE

Tuesday Clinics at the John's Hopkins Hospital. By Lewellys F. Barker, M.D., LL.D. Professor of Medicine, Emeritus, John's Hopkins Hospital; Visiting Physician to Johns Hopkins Hospital; Baltimore, Md., Octavo of 617 Pages. Illustrated. W. B. Saunders Co., 1922. Cloth \$7.00 Net.

This volume is made up of clinical lectures and discussion with students, of clinical cases and known as Tuesday Clinics at Johns Hopkins Hospital. Dr. Barker states in his foreword that "American medicine may well be proud of the advances made since the opening of the new century in the methods of clinical instruction in our medical schools." This statement is abundantly exemplified in the volume of clinics referred to, so helpful and popular were these clinics that Dr. Barker was urged by his students to publish them in book form and thus the profession at large may have access to them.

The plan of the book is to take for an hour a case or a group of cases and in a familiar manner consider the history of the case, or group individually, physical examination, laboratory findings, x-ray, and everything that will throw light on the case. An important point is the systematic study of the patient, impressing up the student's mind not only the important diagnostic facts but the logical relations of one fact to another. The diagnosis of a case of disease involves the highest order of intellect and of logical training, and a familiarity with biological, physical and chemical facts and not altogether, as so many think, with a knowledge of certain recognized diagnostic data.

Dr. Barker in his book makes all this clear. It must be recognized that the symptomatology of many diseases may run very closely together and only by careful study of the symptoms and their logical sequence may a differential diagnosis be made.

The book under consideration is a valuable contribution to diagnosis and treatment, for not only is diagnosis presented in logical form, but the importance of accurate diagnosis to prognosis and treatment pointed out. It was a fortunate determination of Dr. Barker to publish these records.

THE ELEMENTS OF SCIENTIFIC PSYCHOLOGY

By Knight Dunlap, Professor of Experimental Psychology in the Johns Hopkins University, Baltimore, Md. Published by C. V. Mosby Company, St. Louis, Missouri. Price, \$3.50.

The author, in the title, Scientific Psychology, sounds the keynote of his attitude toward the whole subject, and follows throughout, this line of treatment. Considering psychology, therefore as a science, its study must employ those methods, fundamental in any science, although it necessarily has certain methods peculiar to its own field. These special methods, however, must be such as do not conflict with the general principles of all science.

Psychology must then deal with facts and not with inferences and the terms in which these data are stated, must be used strictly as defined in order to prevent confusion by reason of different interpretations.

Dr. Dunlap's book does not treat of special forms, such as, abnormal psychology, so that for the physician interested in mental conditions, it stands as a text-book on physiology, might, in relation to pathology, to be supplemented by other reading. Modern theories are discussed, but facts are discussed more than theories, though there are one or two deviations from psychologic tradition.

The material is handled without especial reference to any particular school of psychology.

Major H. R. Reynolds.

OBSTETRICS FOR NURSES

By Joseph B. DeLee, M.D., Professor of Obstetrics in the Northwestern University Medical School, Chicago. New (Sixth) Edition, Entirely Reset. 12 mo. of 525 Pages with 245 Illustrations. W. B. Saunders Co., 1922. Cloth \$3.00 Net.

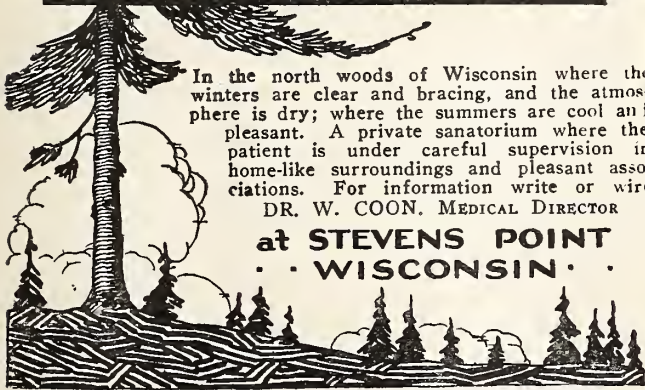
This book is intended for nurses and medical students. It may be assumed in the beginning that a book of this character by so distinguished an author will attract attention. The first two chapters consider the anatomy and physiology of the reproductive system and are well illustrated, followed, in chapter three, with a consideration of pregnancy, labor, and the puerperium. Then the newborn infant in the first weeks. In chapter five the Hygiene of Pregnancy followed by the Infants Layette. Part two relates first to Nursing During Labor and in the Puerperium. There are many things included in the first three chapters of section two that the physician and nurse must consider for the safe issue of the case. Then follows Presentation and Position; Operations, preparation of the room, the preparation of the patient, instruments and other important matters.

Part three: The Pathology of Pregnancy, Labor and the Puerperium. This section is full of interest and trial, so much of the sadness of child-bearing is

(Continued on advertising page xxx)

RIVER PINES

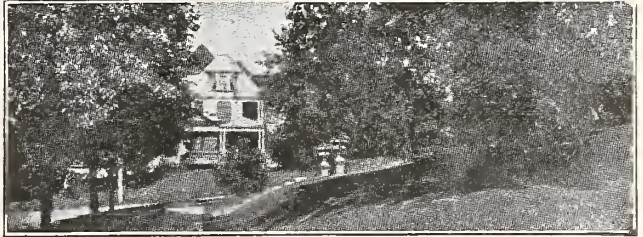
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BOOK REVIEWS

(Continued from page 176)

found here which tests the care and skill of the physician and nurse. With foresight and care the dangers of child-bearing should be comparatively small, but there is also to be considered the comfort of the mother and the welfare of the infant, and here lies the skill and watchfulness of the nurse and the fitness of the physician.

Books like the one before us should prepare both the nurse and the physician for the great responsibility which rests upon them.

THE TREATMENT OF FRACTURES

With Notes Upon a Few Common Dislocations. By Charles L. Scudder, M.D., Assistant Professor of Surgery at the Harvard Medical School. Ninth Edition, Revised. Octavo Volume of 749 Pages with 1252 Illustrations. W. B. Saunders Company, 1922. Polished Buckman, \$8.50.

The ninth edition of Dr. Scudder's important work on fractures is now offered to the medical profession. The eighth edition appeared six or seven years ago. Since that time important changes have appeared in the methods of treating fractures, and to meet these changes the book has been entirely reset and revised. The anatomical points necessary to the diagnosis of fractures have been brought out in a helpful way.

The treatment of fractures both mechanical and operative is presented in unusual detail, and to present operative treatment in more emphatic detail a special chapter is devoted to the discussion of questions in controversy. Undoubtedly many points of apparent difference of opinion relative to operative treatment has been due to errors in the selection of cases and in the technique employed; for this reason the author has with great care endeavored in a separate chapter to point out the fundamental principles recognized by surgeons of experience the world over in determining the selection of the operative or non-operative treatment of fractures. There are surgeons who oppose operative treatment in all but exceptional cases and there are surgeons who advocate operative treatment in all but exceptional cases. All this brings confusion to the mind of the general surgeon who must necessarily treat fracture cases but whose experience and opportunities are limited, for such surgeons the chapter on operative treatment prepared by Dr. Scudder is of great value; not only to such surgeons but to others even, whose writings have been responsible for much of the confusion.

Reviewing a considerable number of malpractice cases where deformities have resulted we find that a most important fault lies in the inadequacy of the splints and dressings applied which has permitted displacement or deformity. It is in respect to care in applying and maintaining dressing that this book excels. If the series of cuts are followed, almost

the whole story of a particular fracture may be obtained, the right and the wrong way is often illustrated.

An important feature of the treatment, the reader should observe, is methods of extension. There are so many fractures of long bones in which the deformity can be overcome by extension with comparatively little attention to splints, and other cases where splints with little regard to extension result in serious deformity and loss of function; that extension in its different relations should be seriously considered is pointed out by the author of this book. Plaster Paris applications to fractures has so important a place in treatment that the author has prepared a special chapter on its employment. A chapter designated as "notes on a few dislocations" has been prepared relating to certain important articulations as the hip, shoulder, elbow, etc.

At the close of the book is a somewhat extended bibliography on fractures which will be convenient for reference.

NEW AND NON-OFFICIAL REMEDIES

During January, the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion in New and Non-official Remedies:

Lederle Antitoxin Laboratories:

Bacillus Acidophilus Milk—Lederle.

E. R. Squibb and Sons:

Bacillus Diphtheroid Allergen—Squibb.

Staphylococcus Citreus Allergen—Squibb.

Bacillus Influenzae Allergen—Squibb.

Egg Yolk Globulin Allergen—Squibb.

Horse Serum Allergen—Squibb.

Winthrop Chemical Company:

Theocin Sodium Acetate.

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No. 5

SUB-ACUTE BACTERIAL ENDOCARDITIS*

WALTER L. BIERRING, M.D., Des Moines

This paper is based on a study of eleven cases of sub-acute bacterial endocarditis observed during the past two years, and a comparison with that of other writers on the same subject.

The first writer to present the subject of chronic endocarditis in comprehensive form was Osler in his Goulstonian lectures in 1885, but in a later contribution in 1908 he gave a classic clinical description of ten cases seen in the preceding twenty years, of chronic character, not specially marked by chills but with a protracted fever, often not high, of four to twelve months duration, and remarked that he had not noted cases of this particular type at the time of his Goulstonian lectures in 1885.

In 1909 Thos. J. Horder published an extensive resume of microbic infective endocarditis with an analysis of 150 cases observed during the preceding eight years, and in this collection there were eighteen examples of the description regarded as typical of the subacute bacterial form.

H. Schottmueller published five cases of so-called endocarditis lenta in 1910, which corresponds to the type under consideration. In recent years a number of French writers have added further contributions, notable Roger, Vaques, Debre, Fiessinger and Janet, usually under the title "endocarditis lenta."

In American literature the names of Billings, Rosenow and Libman are most familiar in connection with the subject, and of these Libman has probably made as extensive contributions as are recorded anywhere.

Libman and Celler in 1910 published a study of forty-three cases seen in eight years, with a duration of four to eighteen months, in March, 1917. Libman referred to a study of 182 cases with sixty-five autopsies, and in 1920 he stated

that he had seen close to 300 cases of this supposedly unusual malady.

At the meeting of the British Medical Association in 1920 the medical section devoted an entire session to the consideration of subacute bacterial endocarditis, and the discussions as published in the British Medical Journal August 28, 1920, constitute a comprehensive estimate of present knowledge of the subject.

In defining the term subacute bacterial endocarditis it should be stated that it does not concern that form of endocarditis which accompanies acute and sub-acute rheumatism. Whatever the causative microorganism of acute rheumatism may prove to be, it is generally agreed that the vegetations of rheumatic endocarditis and the blood stream are bacteria free, which is quite different from the group of cases under discussion.

Differentiation must also be made from that form of endocarditis often termed acute ulcerative or acute malignant, which is but one part of an acute pyemia, where the heart affection is secondary to, rather than responsible for, the systemic septicaemia. The clinical course is quite different, the duration of the disease varying from a few days (fulminating type) to a few weeks, and the infective microorganism is much more virulent.

This form of endocarditis is also not to be confused with that type occurring as a terminal event in chronic disease, which is more often latent and only recognized at autopsy.

After excluding these three forms there remains a group of cases that have been described under the various terms of chronic infectious, chronic ulcerative, chronic malignant, and chronic septic endocarditis, as well as endocarditis lenta, and for which now the term subacute bacterial endocarditis has been generally accepted.

The discussion of the subject will be considered under the following four headings:

1. Etiologic significance of a pre-existing valve lesion.
2. Types of infection and infective foci.
3. Characteristic clinical picture.

*Presented before the Seventy-First Annual Session, Iowa State Medical Society, Des Moines, Iowa, May 10, 11, 12, 1922.

4. Prognosis and treatment.

1. That a pre-existing valvular lesion is essential for the production of this form of endocarditis is evident from the history of all recorded cases. The chronically damaged valve constitutes a predisposing site upon which the new infection is engrafted.

In one-half of the recorded cases a history of acute or sub-acute rheumatism is noted as the cause of the previous valve lesion. Syphilis and other infections are much less frequent. Arteriosclerotic valves have been observed as the basic lesion, and in a limited number of cases (as in one of ours) the primary valvular defect has been of congenital origin.

Of the eleven cases concerned in this report, the aortic valve was involved in four instances, the mitral valve in six, and in one case the pre-existing lesion was a patent ductus arteriosus of congenital origin.

2. In 90 to 95 per cent of the reported cases distinctive bacteria have been isolated from the blood stream, which in most instances have been classed as some type of anhemolytic streptococcus. This was the microorganism associated with nine of the eleven cases in our series.

Libman reports an anhemolytic streptococcus mitis as occurring in 95 per cent of his cases, and the influenza bacillus in the remaining 5 per cent. Because of this constant occurrence Libman is inclined to substitute the term "sub-acute streptococcus and influenzal endocarditis" for the disease instead of "sub-acute bacterial."

In the earlier writings like that of Lenhartz in 1901 when blood cultures were first being made, some type of streptococcus was usually found to predominate.

That other microorganisms as the staphylococcus, pneumococcus and gonococcus may also be causative agents has been clearly demonstrated. Recently Thayer reported twenty-two cases of prolonged endocarditis due to the gonococcus. Whatever the type of causative microorganism may be, it has the common characteristic of being of low virulence, with no tendency even if its embolic manifestations to pyogenic effects.

All ages are liable to the disease, but it is rare in childhood and in old age, one-half of the cases reported occurred in the second and third decade, with a somewhat greater frequency in males than in females.

Between the production of the original valve affection and the later re-infection there is often an interval of several or many years of good health. To what extent the rheumatic history, or the pre-existing valve lesion itself, produces a

predisposition to subsequent infection is not easily determined.

In the eleven cases of this series, the following infections were connected with the onset of the sub-acute endocarditis:—acute respiratory (resembling influenza)—seven; acute cystitis and pyelitis accompanying hypertrophy of prostate—one; infective endometritis and salpingitis—one; acute cholecystitis—one; and acute enteritis in one case.

3. The clinical course of sub-acute bacterial endocarditis is so distinctive as to permit its easy recognition and justifies its classification as a definite type of endocarditis.

Of the eleven cases referred to in this paper, the shortest course was fourteen weeks, and the longest eight months, the last named patient going to bed on Christmas day, 1921 and died August 26, 1922.

The onset is usually insidious and it is often difficult to determine just when the disease begins, this being equally true of the hospital patient who often does not come under observation until late, as well as the private patient who is in close contact with his physician.

The onset symptoms noted are a feeling of lassitude, vague pains, loss of appetite, chilliness, vertigo, headache, cough and less often symptoms pertaining to the heart affection.

The distinctive feature of all cases is the fever, which is a constant accompaniment. Because of the insidious onset it is not improbable that patients go about during the early stage attending to their regular duties and not realizing that they are sick.

It is during this early stage that the thought of tuberculosis, sub-acute rheumatism, mild sepsis, malaria, or typhoid infection is often considered.

In explanation of the clinical symptoms the following is suggested:

1. Those due to the infection and resulting toxemia, producing fever, anemia, exhaustion and enlarged spleen.

2. Those due to the endocarditic changes as the breaking off of particles from the affected valves and mural endocardium, and leading to petechiae, tender cutaneous nodules, clubbing of fingers, embolism, purpura, later renal phenomena, while definite cardiac symptoms are singularly rare.

Although fever is a constant phenomena it is very variable being often irregularly intermittent, again intermittent, some cases having little or no fever, again appearing in waves remaining at 103°—104° for weeks, and towards the end of the disease it may be absent for several weeks.

Sweating is frequently noted during the early period of the disease.

As clinical signs of renal disease appear a rise in temperature results, complications such as embolic phenomena cause a sharp rise, chills also occur with embolism, and again with splenic infarctions.

Certain forms of therapy influence the fever curve, as intravenous injections of salt water, drugs like cacodylate of sodium, blood transfusions, all of which may produce a sharp rise, and again cause a drop to normal for several days, the latter often arousing false hopes as to the efficacy of the therapeutic remedy.

Splenic enlargement is a common symptom and the palpable spleen is an early distinctive sign of this septicemic conditions.

Blood changes are a constant feature but vary greatly in nature; although anemia is a distinct characteristic of this disease, and the reduction in hemoglobin and red cells is often very marked, yet the true blood picture of pernicious anemia rarely develops. The leucocytes may be normal in numbers, again increased, or below normal. In the subnormal counts the lymphocytes are proportionately increased, while in the cases with leucocytosis the polymorphonuclears usually predominate.

The anemia is probably due to the destruction of the red cells by the circulating streptococci even though they are presumable anhemolytic in nature, and it is also likely that the systemic infection and toxemia affect changes in the bone marrow and thus tend to lower the functional capacity of the blood making structures.

The cutaneous phenomena are particularly characteristic and easily of greatest diagnostic import. They may be presented as changes in color, the appearance of petechiae, erythematous eruptions, purpura, and painful cutaneous nodules.

The pallor of the face is a striking feature, to which is added a tired look, and as later a pigmentation is manifest it gives to the face a brownish tinge usually referred to as "café au lait" color.

Purpura so frequently seen in severer types of septicemia is comparatively rare in this disease. Erythematous rashes are likewise rather infrequent. Petechiae on the other hand are a more important symptom and are present in 80 per cent of the recorded cases. They are usually discreetly distributed and only during the terminal stage of the illness do they become more extensive, resembling the petechial eruption peculiar to other severe systemic infections and intoxications. (These petechiae are usually of short duration

and as they fade leave a yellowish brown stain.)

By far the most interesting of the skin phenomena are the tender or painful nodes first described by Osler, and often referred to as "Osler's nodes" which are seen in 50 per cent of the cases. According to Osler's first description these nodes appear at intervals, more frequently on the tips of a finger, also on the pads of fingers and toes, consisting of slightly swollen areas varying in size from that of petechiae to $1\frac{1}{2}$ cm. in diameter, of vivid pink hue, with slightly opaque centers. They are distinctly painful particularly to the touch.

They are not hemorrhagic and the area is not pigmented after they disappear. The best explanation offered is that they are caused by the lodgment of minute emboli near the skin.

It is a common remark of the patient at the morning visit—"Doctor, there is a new tender red spot on the finger or toe (as the case might be) this morning."

These principal cutaneous phenomena are to be distinguished from the lesions on the palms of the hands, inner sides of wrists and soles of the feet found in more acute forms of endocarditis.

Another interesting symptom is clubbing of the fingers which is probably frequently misinterpreted. The sign is commonly believed to be a part of chronic valvular disease or congestion. While this is often true of congenital heart disease, in the adult affected with a chronic valvular lesion, the development of clubbed fingers is more likely to indicate an infection.

Aside from the embolic phenomena associated with certain skin lesions, vascular embolism constitutes one of the main clinical features of the disease. It occurs either as pure embolism or embolic aneurisms.

The splenic infarctions so frequent in this disease as well as the terminal glomerular nephritis are further expressions of embolism.

Pain as a symptom occurs in various forms. Of these tenderness over the lower end of the sternum, first noted by Libman in 1910, is distinctive of this disease. It is not necessarily a part of the attending anemia, because it is noted before anemia is manifest.

Pains may be felt in other bones as the sacrum and ischium. These are often indefinite and only occasionally localized in a particular bone, joint or muscle area.

Headache is a frequent symptom. Add to these the painful cutaneous nodes and we have a series of painful symptoms that readily direct the diagnosis in various channels.

Except for the fundamental significance, the

cardiac symptoms are among the least prominent of all. The presence of an existing valve lesion is very helpful in determining the diagnosis of the disease under discussion, but it is unusual for any new murmurs to develop in the course of the disease. Often they become louder, again they undergo variations during the illness, being louder at one time than another; tachycardia may occur with the increase in fever and general toxemia, but other pulse changes as arrhythmia are rare. Electro-cardiogram changes have not been noted. Pericarditis is rare. The usual signs of myocardial insufficiency are not manifest as a rule until the later stages of the illness.

Renal symptoms become manifest through changes observed in the urine. Soon after the fever is well established an albuminuria is frequently noted, which is often transient, later in the disease red blood cells appear in the sediment, and with their appearance the albuminuria becomes more marked and hyaline and granular casts are present.

The studies of Gaskell and Baehr suggest that acute glomerular nephritis is characteristic of sub-acute bacterial endocarditis, and as such is usually a part of the later period of the disease and of unfavorable prognostic significance.

The patient usually succumbs as a result of the progressive anemia and exhaustion, incident to the continued septicemia, plus the development of complications as embolism particularly intercerebral, with cardiac failure and disturbed renal function, so that pulmonary and visceral congestion with uremia and coma frequently closes the scene.

In summarizing the clinical picture, it is clearly evident that in this group of cases, the symptom complex is of such constancy as to justify the classification as a separate disease.

The insidious onset, long continued fever, during which time, except in the terminal stage, the patient does not seem critically ill, a pre-existing valve lesion, enlarged spleen, anemia, clubbed fingers, characteristic cutaneous phenomena as the painful nodes, and finally the further symptoms of embolism and acute glomerular nephritis, with the demonstration of anhemolytic streptococci or similar microorganisms in the blood stream constitutes a picture that should be readily recognized by simple bedside observation.

The pathological anatomic changes, noted at autopsy are a further criterion that we are dealing with a disease process different from other forms of endocarditis. Aside from the changes incident to the pre-existing valve lesion there is a tendency for the process to extend downward

and involve the wall of the ventricle in the case of aortic lesions and extension on the wall of the auricle, with involvement of the chorda tendineae in connection with mitral lesions.

The mural endocarditis is often more extensive than that affecting the valve surfaces, which probably accounts for the fact that auscultatory phenomena change so little during the course of the disease.

Prognosis and Treatment—This is a distinctly fatal disease, and but a comparatively small number of recoveries have been reported. Libman reports four recoveries, and T. J. Horder about the same number. In our series of eleven, there is one patient who has been fever and bacteria free for seven months, so that a recovery may be considered.

Cases have been reported that succumbed to exhaustion and embolic complications after the fever had subsided, and the blood was bacteria free.

Libman has reported definite healing changes observed postmortem in affected valves, and the mural endocardium, so that evidence prevails that healing of the diseased area does exist.

In one of our cases the autopsy revealed a distinctly healed area on the mural endocardium, which could be related to a seven weeks' course of fever experienced three years before the last illness.

Since this is distinctly an infective process and in many instances due to a particular microorganism, it is but natural that some form of immunal therapy should be considered. Unfortunately all forms of vaccine treatment have not been attended by any appreciable results. It has been proposed that the transfusion donor be primarily immunized with the causative streptococcus before the blood transfusion is made, but of this method no extensive results have as yet been published.

Capps has recently reported four recoveries in a series of eight cases to the extent that the four patients were bacteria and fever free for periods varying from six months to two and a half years, as the result of the long continued use of arsenic in the form of cacodylate of sodium. In the one case of apparent recovery in our series, we are inclined to attribute the result to this remedy which was used intravenously in large doses.

Two reasons are given for the use of arsenic in this form of septicemia, first, it is known that arsenic is retained for a long period in the sera and other body fluids, and second, laboratory demonstrations indicate that the growth of low virulent streptococci are rapidly inhibited by

weak arsenical solutions. It is therefore a form of therapy that deserves a good trial in every instance.

Considering the great mortality of the disease, the question of preventive measures for which Horder made a strong plea in his early paper of 1909, should receive prominent consideration. If there was a way to prevent acute rheumatism, most of these cases would not occur in the first class. Libman states that three-tenths of the deaths in cases of valvular disease, as shown by the records of Mr. Sinai Hospital, New York City, were due to the superimposed streptococcus and influenzal endocarditis. Noting further the tendency to attack principally children, young adults and mainly the individual with heart disease, who as yet has shown no signs of cardiac failure, we recognize the great role of prophylactic measures in this condition. It clearly indicates that every young adult or child with valvular disease should be rid of all ascertainable focal infections as contained in teeth, tonsils, sinuses, gall-bladder, appendix, uterus and adnexa, and urinary tract. Furthermore the need of keeping vitality at its best, developing immunity in every possible way and the prevention of any acute infections should always be borne in mind.

Careful attention to these facts in cardiac clinics, dispensaries, and in daily practice, will do much to control this disease.

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Clinical Record

Case No 1. Mr. L. This patient was first seen in 1911 when he was nineteen years of age, having at that time an attack of acute rheumatism with attending acute (serous) pericarditis, and endocarditis. After recovery from the acute infection, a severe valve lesion in the form of an aortic insufficiency and mitral stenosis resulted. The left ventricle became greatly enlarged and gradually circulatory compensation was established, so as to permit the

completion of a college course and later taking up mercantile work without special discomfort. Four years later several peridental infective foci were removed, and shortly afterward a tonsillectomy was done.

In the spring of 1918 the patient was confined to his bed for a period of seven weeks with a febrile illness, which at the time was regarded as a recurrent rheumatic infection, but in the light of subsequent knowledge it was probably a subacute endocarditis resulting in healing and temporary recovery. The anatomic changes noted at autopsy two and a half years later would indicate this.

During the summer of 1921, ten years following his first rheumatic infection, he contracted an acute respiratory infection and while the acute symptoms soon subsided, a daily fever remained and continued during an illness of nineteen weeks, during all of which time the patient was under hospital observation.

At first a recurrent rheumatism was considered, but the development of an enlarged spleen and culturing of an anhyemolytic streptococcus from the blood stream made a diagnosis of subacute endocarditis conclusive. Three positive blood cultures were obtained—July 26, August 15, and September 26, 1920.

Later embolic phenomena appeared, as painful cutaneous nodes on the ends of the fingers and toes; hemilateral numbness of the face and arm, and urinary signs of acute glomerular nephritis. Arsenical preparations were not used extensively in this case.

Two blood transfusions were made causing each time a sharp reaction, and several days drop in fever temperature. The terminal symptoms were largely the result of increasing nephritis, and during the last ten days the pyrexia was low or entirely disappeared. The exitus was due to cardiac exhaustion and uremia.

The anatomical diagnosis from the autopsy record (Dr. R. R. Simmons) reads:

1. Marked mitral and mural ulcerative endocarditis.
2. Marked mitral and aortic vegetative endocarditis.
3. Marked cardiac hypertrophy with dilatation.
4. Bilateral chronic parenchymatous nephritis (large red kidney) with diffuse petechial glomerular hemorrhages.
5. Mild bilateral hemorrhages of the kidney pelvis.
6. Splenic tumor with numerous infarcts.

Case No. 2. C. L., retired farmer, sixty-two years of age, admitted to the service of Dr. J. T. Strawn in the Iowa Methodist Hospital September 20, 1920, the complaint upon admission being paroxysmal attacks of substernal pain reflected towards the right hypochondrium; a moderate icterus was present, and this with a persistent fever at first suggested a cholecystitis with attending gall-stones.

The general development of an enlarged spleen, systolic murmur over the aorta, continued fever, and a blood culture growth of a streptococcus, directed the diagnosis to a subacute endocarditis. A leucocytosis was present 12,800 to 15,100. The exitus occurred on December 4, 1920, after a febrile illness under observation of nearly eleven weeks.

The anatomic diagnosis as reported by Doctor Simmons reads:

1. Marked mitral and mural ulcerative endocarditis.
2. Marked atheromatous degeneration of all portions of the aorta.
3. Marked cardiac dilatation, and moderate cardiac hypertrophy.

Case No. 3. Mrs. C., admitted to the Iowa Methodist Hospital June 1, 1921, thirty-four years of age, housewife, two daughters six and eight years. History of acute rheumatism at eighteen years of age, from which a mitral stenosis resulted.

During April, 1921, had an operation for appendicitis and left salpingitis; post-operative fever continued with purulent endometritis discharge, and marked secondary anemia, which constituted the principal complaint upon admission on June 1. While the thought of a reinfection of the previously damaged mitral valve was considered, the source of the continued septic-like fever was attributed to an infected uterus and a hysterectomy was advised and carried out June 5, 1921, in the service of Dr. O. J. Fay. Following the operation the fever continued, and this fact with the development of an enlarged spleen, painful subcutaneous nodes and a blood culture of anhemolytic streptococcus soon made the conclusion of subacute bacterial endocarditis the more likely one. The occurrence of embolic infarcts in the spleen was recognized by the periodic pains and increased swelling in this organ.

The anemia became very marked and at times suggested the pernicious type. To relieve this condition two blood transfusions were carried out, each resulting in a marked reaction and several days drop of fever. The exitus occurred on August 30, 1921, after thirteen weeks of observation in the hospital.

The autopsy report reads:

1. Mitral stenosis and insufficiency.
2. Acute endocarditis involving mitral valve and extending on to the mural endocarditis of the left auricle.
3. Infarction of the spleen.
4. Acute glomerular nephritis.

Case No. 4 Miss M., school teacher fifty-six years of age, seen August 23, 1921, in consultation with Dr. Kenefick of Algona, Iowa, at which time the patient has been ill for eight weeks with continued fever, accompanied by anemia, an enlarged spleen, painful cutaneous nodes, and pre-existing mitral stenosis, suggested the diagnosis of subacute bacterial endocarditis. Death occurred on September 10, 1921. An autopsy was not obtained.

Case No. 5. Mrs. V., sixty years of age, seen in consultation with Dr. Arent of Callender, Iowa, on October 11, 1921, at which time the patient had been ill for a period of twenty weeks. A pyrexia accompanied by frequent chills, was present during the entire time. The onset of the illness resembled an influenza infection. A pallor of the skin soon became manifest, and the anemia later assumed the character of the pernicious type. At frequent intervals the attending physician had noted petechial hemorrhages of the lower limbs with painful nodes of fingers and toes. An enlarged spleen became gradually more prominent.

During the tenth week a blood culture of anhemolytic streptococcus was obtained. The patient had had a previous mitral stenosis resulting from a rheumatic infection in early life, and this with the existing symptoms of pyrexia, bacteria, enlarged spleen, anemia and petechiae led Dr. Arent to make a diagnosis of chronic infectious endocarditis, which could be readily confirmed at the examination on October 11.

At this time the symptoms of acute glomerular nephritis, acute broncho-pneumonia with visceral congestion and edema were manifest. Death occurred one week later. An autopsy was not permitted.

Case No. 6. Mrs. F., twenty-three years, admitted to the medical service of the Iowa Methodist Hospital on December 8, 1921, complaining of precordial pain, dyspnoea, and dizziness. On September 20, 1921, or twelve weeks previously, patient had passed through an influenza-like infection and ever since a daily fever had been noted.

The patient at birth was described as a "blue baby" and as early as three years of age a heart murmur had been detected by attending physician, and frequently noted since.

At the time of admission, a loud blowing, systolic murmur was heard over the base of the heart, particularly over the pulmonary valve area. The intensity of the murmur varied during the course of the illness, being influenced greatly by the degree of fever present. After long consideration the heart lesion was diagnosed as congenital in origin, and consisting of a patent ductus arteriosus. The accompanying continued pyrexia, enlarged spleen, anemia, painful cutaneous nodes, and positive blood culture of anhemolytic streptococcus permitted an early diagnosis of subacute bacterial endocarditis being made.

The intravenous use of cacodylate of sodium was instituted early in increasing doses to ten grains during the period from December 10, 1921 to January 28, 1922. At the end of seven weeks or nineteen weeks after the fever was first observed, an improvement in symptoms was noted. The pyrexia gradually disappeared, the spleen became less palpable, blood state improved, and the blood became bacteria free. Signs of renal disease were never very marked.

The heart murmur became less intense, but otherwise no change was noted in it.

The patient was permitted to go to her home on March 2, 1922, since which time monthly reports have been received regarding her condition. She has remained fever free and with a moderate active life, the symptoms of subacute endocarditis have not as yet reappeared. Whether this should be regarded as an instance of recovery or transitory remission of symptoms is difficult to determine. (Note April 15, 1923, continues free of symptoms.)

Case No. 7. Mr. S., merchant, forty-three years of age, seen in consultation with Dr. Eli Grimes of Des Moines on February 1, 1922, which was the third week of illness. This patient had passed through an acute rheumatic infection twenty years before, which had left a mitral valve lesion. The onset of this illness resembled an acute respiratory infection, which was accompanied by muscular pains in different parts and this led to the thought of a recurrent rheumatism. Fever was a symptom at the onset and continued; a leucocytosis was present which later increased to 23,000 with 85 per cent of polymorphonuclear cells. The blood culture developed an anhemolytic streptococcus, and this with the persistence of fever, gradually made a diagnosis of subacute endocarditis more likely. The mitral murmur became louder, a splenic enlargement developed, with petechiae and painful cutaneous nodes, so that the diagnosis was fully confirmed. A marked anemia, and symptoms of acute glomerular nephritis became a feature of the disease condition, which were prominent factors in the terminal exhaustion.

During the last two weeks the temperature was normal. Death occurred after fifteen weeks of illness. An autopsy was not obtained.

Case No. 8. Mr. W., farmer, fifty-three years of age, seen on February 10, 1922 with Dr. Harper of Greenfield, Iowa. At this time the patient had been ill since the early part of November, 1921. Previous to this date symptoms of disturbed circulation in the form of dyspnea and edema had existed. In November began to have diarrhoea which continued throughout his illness; daily fever developed and this with occasional nose bleed suggested a typhoid infection, but two Widal blood tests gave a negative result. At the time of the examination, February 10, 1922, the temperature ranged from 101 to 105, a mitral stenosis murmur could be distinctly heard over the precordium, the abdomen was distended, liver palpable and the spleen distinctly enlarged. Painful cutaneous nodes were present on ends of the fingers, and had been previously observed. The urine contained a moderate amount of albumen, and numerous red blood cells and hyaline casts in the sediment. The blood examination revealed Hgb. (Talquist) 40 per cent, red cells 1,270,000, leucocytes 27,200; differential count—polymorphonuclears 40 per cent, lymphocytes 58 per cent, transitional 2 per cent, many normoblasts were noted.

A blood culture was not obtained, yet without this a diagnosis of subacute bacterial endocarditis was justified by the symptoms. Death occurred on March 2, 1922. No autopsy.

Case No. 9. Miss M., teacher, thirty-seven years of age, seen May 6, 1922, in consultation with Dr. M. Bannister of Ottumwa, Iowa, presenting the following complaint: Illness about five months, beginning early in December, 1921, with rather sudden onset, simulating influenza, general muscular pains, and fever, (although admits had felt exhausted for some time previously). Went to bed under advice of Dr. Bannister. Fever continued daily, intermittent type ever since. At first regarded as form of influenza, then for a time considered tuberculosis of lungs (x-ray plates of chest were negative). At seven years of age had scarlet fever, after which noted shortness of breath after exertion. In 1903 examined at college, and mitral lesion detected. No special cardiac embarrassment at time of this examination. In January, 1922, Dr. Bannister made a diagnosis of recurrent endocarditis, excluding focal infection as sinuses, teeth and throat. In February blood culture revealed anhemolytic streptococcus, and again in March. Blood counts varied from leucopenia of 4,200 at first, to later a leucocytosis of 12,000 with 75 per cent polymorphonuclears. Hemoglobin reduced to 60 per cent, red cells to 4,100,000 (May 4, 1922). Last six weeks occasional painful nodes on ends of fingers, of short duration, none on toes. Pains over spleen, and certain joints. No headaches. No mental confusion, digestion fair, bowel function sluggish. Urine findings, in early examinations a trace of albumen, with red cells in sediment; lately more albumen and casts. Has been given course of vaccine, streptococcus viridens (stock) and later fifteen doses of vaccine prepared from streptococcus obtained by blood culture from the patient.

At the time of the examination on May 6, 1922, the patient appeared pale, the face having a tired look and the skin of brownish tinge. The heart lesion was a definite mitral stenosis, spleen moderately enlarged and palpable, painful subcutaneous nodes were present on the toes.

In view of the history of twenty weeks of pyrexia, with leucocytosis, enlarged spleen, petechiae and painful nodes, with a blood culture of anhemolytic streptococcus and a pre-existing mitral stenosis, permitted a definite diagnosis of subacute bacterial endocarditis. Death occurred July 20, 1922. No autopsy.

Case No. 10. Miss B., seventeen years of age, seen on May 7, 1922, with Dr. Smith of Clarksville, Iowa. This patient had been examined on several previous occasions. At eleven years of age she had an attack of acute rheumatism followed by chorea after which a mitral stenosis was recognized. In December, 1921, she was taken ill with an acute influenza-like infection, that was later accompanied by epistaxis and moderate diarrhoea. A positive Widal

blood test was obtained which permitted a diagnosis of typhoid infection. Had previously undergone anti-typhoid vaccination. About February 15, the temperature returned to normal and remained so for one week, after which the pyrexia returned and has remained ever since.

To the symptom of fever has been added a profound anemia, an enlarged spleen, definite cutaneous phenomena in the form of petechiae and painful nodes on ends of fingers and toes, and marked accentuation of the endocardial murmur. In the absence of a positive blood culture, a diagnosis of subacute bacterial endocarditis is justified. (Death occurred August 26, 1922.)

Case No. 11. Mr. B., sixty-three years of age, seen in consultation with Dr. C. D. Busby of Brooklyn, Iowa, in the service of Doctor Fay at the Iowa Methodist Hospital on May 16, 1922.

The patient had a clinical history of urinary retention due to an enlarged prostate gland, for which a suprapubic cystotomy was performed by Doctor Fay. After the urine had become clear and all signs of infection of the urinary passages had been relieved, a continued fever still remained that was difficult to explain. A rheumatic infection had occurred at twenty years of age. It was difficult to examine the heart because of a thorax definitely resulting from a rachitic affection in childhood, but a mitral insufficiency murmur could be clearly heard in the back. An enlarged spleen and the gradual development of a left hemiplegia suggested the diagnosis of subacute bacterial endocarditis. Death occurred May 22, 1922, and the autopsy confirmed the diagnosis of acute endocarditis of the mitral valves with extensive mural endocarditis extending onto the left auricle.

Discussion

Dr. Campbell P. Howard, Iowa City—It has been a great privilege to listen to this scientific contribution of Dr. Bierring. It is too trite to remark that as usual he has left nothing for me to say. It is the duty of one who opens a discussion to just summarize what he has gathered as the most important data brought out by the essayist, and as I listened to Dr. Bierring I could not help but feel that an important point in connection with this subject is the historical one of previous damage to the heart valve. However, I feel that while this is generally spoken of in the literature, it is not universally true by any means, for in quite a number of our cases there has been no antedating history of rheumatic fever or cardiac pathology to suggest any pre-existing valvular disease. In this regard, not one of the last three cases we have had at Iowa City had a pre-existing rheumatic history and the patients were perfectly certain there was no pre-existing heart pathology, at least as far as symptoms were concerned. One of our patients is now in the hospital, a man of thirty with a good history except family tuberculosis. Some time during the past winter he began to tire out under the strain of his surgical work and to feel

miserable at the end of the day, headachy and experiencing a vague aching about his limbs. He found that he had a temperature of 101°, and about three weeks ago, at the suggestion of Dr. H. H. Beye, he reported at the office and gave me that history. He had then a temperature of 101°, slight leucocytosis, a very indefinite mitral murmur; the spleen was not palpable. We instructed him to keep track of his temperature, put him on salicylates, and asked him to report again. We finally sent him to the hospital and secured a culture. The streptococcus viridans was present in considerable numbers. He has run a temperature of 99° to 100° every day and is apparently in pretty good physical condition. Two other cases during the past winter gave a similar history with vague arthritic pains at the outset of the trouble. We wish to emphasize that the arthritic pains are not to be regarded as of rheumatic origin, they are never associated with effusion into the joint, the joint is seldom reddened. It is nothing but an arthralgic type of disease. These conditions are expressions of general septicemia rather than of localized infection. The anemia, pigmentation and splenic enlargement have been well emphasized by Dr. Bierring. The second condition I want to refer to is kidney lesion. Libman and his associate Baer early pointed out the frequency of renal disease complicating this interesting chronic affection of the endocardium, and subsequently Baer reported a series of seventy odd cases coming to autopsy in the majority of which kidney lesions of the glomerular type were demonstrable. He has also found that a striking feature of this glomerular nephritis consists in the few glomeruli that are involved.

Dr. C. F. Wahrer, Fort Madison—It may be somewhat presumptuous for me to discuss a paper by Dr. Bierring and following Dr. Howard, two of our most eminent clinicians. Two years ago I had the temerity to discuss Dr. Eggleston's paper on Digitalis, presented before the Section of Medicine of the A. M. A. at New Orleans, and I want to simply say: That a few years ago this disease held the stage, just as yellow fever, tuberculosis, pneumonia, etc., have done at various times. We are now able to combat tuberculosis fairly well, we are able to say that yellow fever is gone. Then cancer came forward and claimed our attention, and on the very heels of this the diseases of the heart became more common and the number of cases is increasing rapidly. I dare say not a man is present here who hasn't all the way from three or four to forty cases of heart disease on hand all the time. Therefore we are all intensely interested in the subject, but it is absolutely impossible to learn all about bacterial endocarditis from Dr. Bierring's paper or Dr. Howard's discussion to-day. Learn all you can concerning this condition because it will come to you, friends and others will come to you for help and you should be able to give this help in an intelligent and professional manner from all that is known now. Heart trouble suggests the use of digitalis. Don't believe

it every time. I want you to learn to differentiate between endocarditis, pericarditis and myocarditis, and the different forms of heart lesions. When you have an endocarditis you have that which is worthy of your steel, acute, subacute or chronic. It will be enough for you to differentiate and treat these heart diseases that are becoming more numerous all the time owing to high tension living, excessive work, without giving the heart adequate rest, and I am sorry to say they are slipping by some very able men who are practicing medicine. Some time ago I had as a patient a woman of fifty-two who had been treated for five years for all sorts of conditions, even indigestion. She had a heart lesion just fairly well beginning, decompensation just showing around the ankles, heart beats increasing with some irregularity, etc. Proper and careful diagnosis, and treatment with the best of digitalis, soon relieved her of her trouble. I have not treated her for some months, as her decompensation was compensated. You cannot do too much for these cases, because if they go too long they will die in spite of the best clinicians in the world. Learn to differentiate between the different kinds of heart diseases. Learn that this subject should claim your attention, read everything you can get hold of, then in the light of your reading, study your patients, and learn to differentiate between the various remedies. Most cases of heart trouble will stand digitalis, providing you have good digitalis. You should carefully differentiate between digitalis and so-called digitalis. And when you give it, don't "monkey" with small doses, but give enough. You need a long pole to get the persimmons that hang high. Don't fear to give enough good digitalis. The big dose helps—the little dose irritates, disappoints, and—kills. Don't treat these cases with cactus no matter what the cactus men say. Nor use the shotgun prescriptions that contain a whiff of digitalis, another whiff of belladonna and a little cactus or cactine. If you do, this is what I call monkeying with human life.

Dr. E. T. Edgerly, Ottumwa—I am especially interested in this paper. I have been wondering whether all these cases do last twelve to fourteen months. Most of them undoubtedly do. I have had two cases that lasted quite a while, say from three to six months, then the patients died. In another case I thought the patient had this disease and he recovered. I do not think the fact of getting well has anything to do with repair, but remaining sick has a great deal to do with lack of ability to produce immunity with antibodies. That is where we are perhaps lame in the study of this disease. We do not know now why these cases do last four to fourteen months, and why occasionally a case that we have worked out very carefully gets well in about four or five weeks and remains well. The theory of this thing must be worked out along the lines of discovering what produces immunity and why some of our patients fail to produce immunity and occasionally some of them do.

Dr. Frank M. Fuller, Keokuk—I hesitate to discuss these cases that we have so little personal familiarity with, but one point the essayist brought out in connection with the disease is the peculiar and deep type of anemia that is present in these cases. Dr. Bierring referred to the fact that the anemia would be very suggestive of the primary type, but without the characteristic blood findings of pernicious anemia. I had an unfortunate experience along that line, although the case finally came out very well, but I was misled by this factor. It was cleared up entirely by the blood findings. I want to ask one question. I understood Dr. Bierring to say that the bacteriemia was present all the time. My recollection of the matter is that in Osler I read that these cases are deceptive because of the fact that the bacteriemia clears up oftentimes during the course of the disease and before its termination. I would ask if I am right in my recollection of this matter.

Dr. Julius S. Weingart, Des Moines—Bacterial endocarditis is one of the diseases in which blood culture is of great aid in diagnosis. I should like to make a few remarks regarding the probability of getting positive results from blood culture in sepsis. A physician who takes blood cultures in all cases of severe infection will be disappointed by numerous negative reports. Hence it is wise to bear in mind what pathological conditions are most apt to reveal themselves by a bacteriemia. In any case of sepsis where the infective focus is in or near the larger vessels of the circulatory system bacteriemia is very probable. In bacterial endocarditis the focus is on a heart valve, hence the positive culture. In a large percentage of post-partum infections positive blood-cultures are found, because of the direct infection of the interior of the uterine sinuses. For the same reason bacteremia is so frequent after middle ear disease because of the proximity of the lateral sinus. Similarly, infected hemorrhoids are apt to result in general pyemia. This purely anatomical consideration serves to explain why demonstrable bacteriemia is so much more frequent in these conditions.

Dr. A. D. Woods, State Center—I would like to ask Dr. Bierring if he includes in this group of cases metastatic lesions in which there are ball thrombi in the auricular appendix of the left auricle, and in which we have petechial spots in the extremities and emboli which lodge in the liver and spleen.

Dr. Daniel J. Glomset, Des Moines—I would like to call attention to the morbid anatomy of these green-producing streptococci. As years go by we are becoming more and more aware of the fact that these organisms that are so commonly found, or at least their sisters are the most conspicuous organisms of the respiratory and mouth passages, are in many instances capable of producing disease. It seems to me that the characteristic change produced by these green streptococci is that of proliferation. The condition is a subacute inflammation. Probably these organisms are responsible for the glomerular nephritis in certainly a large percentage of the

cases. They are also very commonly found, and often seem to be the only organisms present, in asthmatic bronchitis. They are also found very commonly in sinus troubles and in a number of other conditions, chronic or subacute. Frequently these organisms will produce hemolysis around the colonies, particularly when you isolate them from active lesions, and the hemolysis disappears after having subcultured them once or twice. I merely want to bring out the fact that these green-producing streptococci characteristically produce subacute lesions.

Dr. Bierring—The anemia in these cases varies greatly. In some it is a very mild secondary anemia, again it comes decidedly close to a pernicious anemia picture. Frequently this condition causes some confusion in diagnosis as pernicious anemia will produce a low grade of fever and occasionally is accompanied by a soft functional heart murmur which might be difficult to distinguish from a real endocarditis. There is no question that these cases towards the terminal stage are practically bacteria free and also fever free. Very commonly there is no fever at all during the last three or four weeks and you may think the patient is getting better, but the end comes quickly because of exhaustion incident to the long illness. With reference to the treatment, it has been emphasized that these cases are usually engrafted upon a pre-existing valvular lesion and occur mostly between the second and third decades. They occur in that sensitive period when the individual is predisposed to this infection by the heart affection and the preceding condition that caused the same, and tonsillitis, infected sinuses, and the other forms of focal infection such as have been referred to by Dr. Glomset in which the streptococcus viridens is the common microorganism, promoting a reinfection, and consequently the prophylaxis should be the most prominent factor in the treatment. Every individual, particularly young persons, with a chronic valvular lesion, should be rid of every possible focus of infection, in tonsils, teeth, gall-bladder, or any other focus of infection that might at some time under a condition of lowered vitality permit the valve to become reinfected. Arsenic is the drug that has been used most freely. The basis for arsenic treatment consists of two factors: (1) That in laboratory work weak solutions of arsenic have been shown to be inhibitory to the growth of streptococci; (2) it has been experimentally demonstrated that arsenic when introduced into the system remains a long time in the animal fluids of the body. We have found that the cacodylate of sodium seems to be highly adaptable to the treatment of this condition. In one case in which we secured some definite results five to ten grain doses of agent were given intravenously until the patient was thoroughly saturated with the arsenic. So that at least a good trial with the cacodylate of sodium should be carried out in each instance. But I say again that the most important feature is the pro-

phylactic treatment, and in all cardiac study this fact should be borne in mind: that every individual with a chronic heart lesion, particularly in young life, is subject at one time or other to reinfection of that lesion and so develop the illness which we have been discussing today.

THE ROUTINE WASSERMANN TEST IN OPHTHALMOLOGY*

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The title of this paper is not intended to convey the impression that the Wassermann blood test is essential to a complete study of every disease of the eye, or the only routine to be employed to determine the absence or presence of syphilis. The value of the test as an aid in the diagnosis of syphilis can not be denied, but to give it first rank, and to accept the results of a single test, whether positive or negative, without further laboratory and clinical evidence, can lead only to gross error, and bring the test into disrepute.

The chief value of the Wassermann test is that it furnishes an easy, short cut to the early recognition of syphilis, as the underlying cause of disease of the eye where the origin is obscure, and where time is an important factor in conserving eye sight. In the hands of the observing clinician it is doubtful if the final results would be materially changed, so far as the recognition of syphilis is concerned. Statistics dealing with the influence of syphilis on diseases of the eye, compiled before the Wassermann test came into use, compare very favorably with those now being compiled with the aid of the laboratory methods of diagnosis.

The final results of the influence of early and thorough treatment made possible by the laboratory diagnosis, will undoubtedly greatly reduce the number of cases of the partially and totally blind.

It was early recognized, in the use of the serologic blood test, that negative findings were not uncommon in individuals actively syphilitic, and more recently, evidence is accumulating in support of the view that a positive reaction occasionally occurs in non-syphilitics. But using the blood test as the starting point, and as only corroborative evidence in the final decision, with equal consideration for clinical manifestations, these slight uncertainties are insignificant when compared with the total yield of syphilis, recognized early, that might have been delayed in de-

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tection, or overlooked altogether, without the aid of the laboratory findings.

The frank positive in the absence of syphilis is comparatively rare, and has not occurred in the 676 cases used as the basis of this paper. There was one case in which a 75 per cent positive was reported on the first test, 50 per cent positive on the second, and negative on the third. The three specimens of blood were taken at intervals of a week, and specimen No. 1 was again run with specimen No. 2, and likewise Nos. 1 and 2 were run along with No. 3, the results remaining the same each time, so that the possibility of an error of technique was eliminated. There was nothing in the history, or in the clinical evidence, to support the laboratory findings on the first and second blood specimens, and the spinal fluid was negative. There were sixteen cases 50 per cent positive, and thirty slightly positive initial Wassermanns reported, in which the clinical findings and subsequent laboratory findings were not corroborative.

The persistent partially positive Wassermann reaction is not to be ignored in the presence of some disease of the eye, in which syphilis is one of the prominent etiologic factors, even though the history and general clinical picture are not at first corroborative. The doubtful positive is an indication for further laboratory and clinical study, and in the presence of syphilis, it is a rare occurrence not to find data in the history to substantiate the laboratory findings. To the physician directing his work to the field of ophthalmology, the history is the most valuable adjunct to the laboratory findings.

Married women, the majority of whom are unaware of ever having had a specific infection, will usually give an unmistakable history, especially as to abortions, still births, and disturbances of menstruation. In men, unless the history is positive, it is usually worthless.

In congenital syphilis, the maternal history is always valuable, while the paternal history is usually worthless. The father, as a rule, has had his syphilis secretly treated, and is safe in denying infection, because he knows his Wassermann is going to be negative, and is anxious to submit to the examination, and gallant in defending his wife's character, in the presence of her positive blood test, and defames one of her parents to explain her infection. In fifteen of the congenital syphilitics reported in this paper, Wassermanns were obtained on the parents, yielding eleven positives in the mothers, and three in the fathers. The history of several living, healthy

children, is not to be accepted without minute, detailed inquiry, as to the maternal history between the births. Almost invariably an unusually long gap between two births will be revealed, and usually one or more miscarriages, a still birth, or an unhealthy child living a few weeks or months.

The negative Wassermann test, in the presence of syphilis, usually occurs in patients with very early, or very late manifestations. Two cases of acute iritis, which occurred before the secondary rash, yielded very faintly positive reactions on the initial blood test. In the late manifestations of the disease, the majority of patients are seeking relief for some ocular derangement, as extra ocular muscle paralysis, optic atrophy, advanced changes in the retinal blood-vessels in very young subjects; which are in themselves strong evidence of a specific infection.

Out of the 140 patients with positive findings, eleven yielded negative initial blood Wassermann. All, with the exception of one, had some manifestation of neuro syphilis, and all had positive spinal fluids. One was a persistent infiltration of the cornea, following a slight trauma in a patient with a positive history and insufficient treatment. Anti-syphilitic treatment was instituted, and the blood Wassermann eventually became positive.

This communication is based on an examination of 676 patients, with 685 diseases. Nine having two diseases of the eye, resulting from syphilitic infection, the majority being cases of extra ocular muscle paralysis with a coexisting disease of the optic nerve. Of the 685 diseases of the eye, 535 were negative for syphilis, and 155 positive.

The Wassermann blood test has been used as a routine in all diseases of the eye, in which syphilis is known to be a prominent etiologic factor, in all cases of obscure origin, and in cases running an unusually protracted course, regardless of the nature of the disease, or the exciting cause. All diseases of the cornea (except trauma), iritis, cyclitis, uveitis, diseases of the choroid, retina, optic nerve, and extra ocular paralysis have been subjected to the blood test as a routine. In diseases of the eye lids, conjunctiva, lachrymal system, cataract, and glaucoma, it has not been used as a routine. In cases coming for the relief of symptoms attributed to eye strain, which presented unusually severe symptoms, in most instances headache which seemed out of all proportion to the refractive error found, and not accounted for by other clinical evidence, the Wassermann test has yielded five positive, out of fifty-six cases.

The cases examined were classified as follows :

	Total	Wass. Neg.	Wass. Pos.
Diseases of Conjunctiva and Eye Lids.....	22	20	2
Diseases of the Lachrymal Gland.....	1	0	1
Diseases of the Orbit.....	10	6	4
Episcleritis	9	9	0
Diseases of the Cornea.....	129	100	29
Iritis	97	60	37
Cyclitis	8	8	0
Uveitis	35	30	5
Primary Optic Nerve Atrophy.....	43	12	31
Retro-Bulbar Optic Neuritis.....	18	18	6
Descending Optic Neuritis.....	38	26	12
Choked Disc	8	8	0
Retinitis Pigmentosa	4	4	0
Exudative Retinitis.....	4	3	1
Detached Retina	7	7	0
Other Diseases Retina.....	15	15	0
Central Choroiditis Senile.....	37	34	3
Other Diseases Choroid.....	19	15	4
Glaucoma	15	15	0
Pulsating Exophthalmos	1	0	1
Paralysis Extra Ocular Muscles—3rd Nerve..	27	14	13
Paralysis Extra Ocular Muscles—4th Nerve..	2	2	0
Paralysis Extra Ocular Muscles—6th Nerve..	24	20	4
Paralysis Accommodation.....	6	5	1
Cataract	10	10	0
Hemorrhage into Vitreous.....	6	5	1
Plugging Central Retinal Artery.....	6	6	0
Hemianopsia	4	3	1
Intra Ocular Growths.....	3	3	0
Cases Asthenopic Symptoms with negative or insignificant eye findings.....	56	51	5
Unclassified	21	21	0
	685	530	155

A detailed outline of all the cases of syphilitic origin is impossible, in the space of time allotted to this paper, and a brief general consideration of the diseases of the eye, in which syphilis has proved to be a prominent etiologic factor, is all that will be attempted.

Of the twenty-nine diseases of the cornea, sixteen were cases of interstitial keratitis, occurring in congenital syphilitics. All had frank positive blood Wassermanns. The youngest patient was five years and the oldest twenty-seven. Eight mothers were also subjected to the Wassermann test, with five positive blood findings, and three negatives. Eight of the cases were the oldest living children. In two instances the next oldest children were also syphilitic, but did not have any marked clinical evidence of the disease. In three, there were healthy older and younger children. In four, the patient was the only child.

There were three cases, all young men from eighteen to twenty-one years old, not included in the cases of interstitial keratitis, who had unmistakable evidence of congenital syphilis, and partial positive blood Wassermanns, who were, strictly speaking, not corneal diseases. Two of them had no discoverable corneal changes, one had a very minute grayish patch of corneal infiltration in one eye, and all three had all the other

manifestations of a mild interstitial keratitis. They complained of constant sensitiveness to bright light, profuse lachrymation and inability to use the eyes for close work, without severe discomfort. On close examination of the eyes a deep ciliary injection was discovered, which became very noticeable on any manipulation of the eyelids, or any exposure of the eyes to bright light. The anterior chamber appeared deeper than normal, in this respect resembling a cyclitis. The condition resembled what one would expect to find just preceding the onset of an interstitial keratitis. All were persistent, having existed for six weeks in one, eight months in another, twelve months in the third, when they came under observation. They had received no benefit from correction of refractive errors and local treatment. They did not have frank positive Wassermann reactions. All had a 50 per cent positive on each of three specimens. Two had the teeth indicative of congenital syphilis. In all three the maternal history was positive, and indicated that syphilitic infection occurred in the mother four to five years preceding the birth of the patient. In all three of these cases, anti-syphilitic treatment did not seem to influence the disease. One was under observation for two years, at the end of which time his eye symptoms had disappeared. One was under anti-syphilitic treatment for six months, without benefit. The third is still under observation.

The remaining ten cases of corneal disease were all the result of acquired syphilis, and six were of one type, keratitis profunda; consisting of a gray infiltration of the deeper layers of the cornea, at or near the center, irregular in outline, and shading off gradually into the clear surrounding cornea. The overlying epithelium is generally, but not always, denuded over a small area corresponding to the denser part of the deep opacity. In two instances, the infiltrated area extended very slowly, the overlying abrasion extending with it. The epithelium reforms and breaks down again on the least exciting cause. Pericorneal injection is usually mild, becoming more evident while the epithelium is abraded. There was entire absence of vascularization of the cornea. Two had trifling trauma of the cornea as exciting cause; one a small foreign body; the other an abrasion from a finger nail. All ran a very stubborn course, eventually healing under anti-syphilitic treatment, and leaving permanent scars, resulting in damaged vision. These cases ranged in age from twenty-four years to fifty. Three other cases were observed in non-syphilitics, but all were senile:

Of the remaining cases of syphilitic disease of the cornea, three were of the variety described by Fuchs as *keratitis punctata profunda*, and occurred as a very late manifestation of the disease. The one remaining case was a positive Wassermann reaction in a patient with phlyctenular ulcer of the cornea. The local condition was probably not dependent upon the general infection.

It will be observed that out of 129 cases of disease of the cornea only nine or possibly ten were due to acquired syphilis, and these were all of a type easily recognized. The congenital cases do not usually present any difficult problems of diagnosis, so the necessity for the routine Wassermann in all diseases of the cornea, is not apparent.

Of the ninety-seven cases of iritis, thirty-seven, or approximately 38 per cent were syphilitic. Twenty-three cases were of the recurrent type, that is, patients with a history of two or more attacks of iritis, none of which were syphilitic, and deducting these as non-syphilitic, the percentage of syphilis positive cases is raised to fifty. There was no history of more than one attack of syphilitic iritis. Two had occlusion of the pupil from a long continued attack of iritis, in which the cause had been overlooked and not treated. In the thirty-seven syphilis positive cases the youngest was eighteen and the oldest sixty-three; about equally divided between males and females, being eighteen of the former and nineteen of the latter. In two cases the iritis preceded the secondaries, one a recently married woman, twenty-four years of age, developed an acute iritis five days before the secondary rash appeared, which was so mild that it could easily have escaped detection. The first Wassermann was a faint positive, developing into a frank positive, some two weeks later. The second case occurred in a physician fifty-two years old who had an unrecognized initial lesion on the right thumb. The iritis appeared three days before the onset of secondaries. In ten cases the secondary eruption was evident when the iritis developed, none of them having had treatment. The longest time elapsing between the initial lesion and the onset of iritis was ten years. Although eleven denied specific history, and failed to give any clinical evidence as to the probable time of their infection, all the cases of iritis occurred in patients of acquired syphilis.

Of the forty-three cases of primary optic nerve atrophy, thirty-one or approximately 70 per cent, were the result of syphilis. Ten cases were the result of congenital syphilis. The youngest was four years old and the oldest twenty years. Eight

were under twelve years. Five were classed as mental deficient, none of whom had vision of better than 20/200 in the better eye. None of the ten had good vision in either eye. The best was 20/50 in one eye. Six had evidences of a former choroiditis. Two had synechia, the result of former iritis, and four had scarred cornea, the result of former interstitial keratitis, although in three of these the parents denied the history of former sore eyes. In seven the optic atrophy was not progressive, and the history indicated that the atrophy had occurred very early in life. The youngest case was in a boy four years of age, who had made normal progress up to the end of his third year, when he had an illness resulting in partial paralysis of his lower limbs. He made slow recovery, but at the end of six months was able to walk fairly well. At this time the parents noticed that he did not see well. He did not come under observation until six months later, when his optic atrophy was complete. The blood Wassermann and spinal fluid were positive. The mother had a 75 per cent positive Wassermann. One child two years old, and the father were negative. All the cases yielded frank positive blood Wassermans.

Of the twenty-one cases of optic nerve atrophy occurring as the result of acquired syphilis, eight had frank positive blood Wassermans, seven had 50 to 75 per cent positive; one a faint positive, and five yielded negatives on two or more specimens of blood. All had positive spinal fluids. Three were cases of total atrophy in both eyes, at the time they came under observation. Three more came under observation with 20/100 or less vision in the better eye, and went on to complete atrophy in spite of energetic treatment. In five the vision remained the same after treatment. In two it improved—in one case from 20/100 to 20/30. In four one eye only was affected and were coincident with a complete third nerve paralysis. Two of these became totally blind in the affected eye, and the other two had vision of less than 20/200.

Out of the twelve cases of syphilitic intraocular optic neuritis seven were classed as neuroretinitis. Two cases came under observation totally blind in one eye and less than 20/200 in the other eye. In one case the blind eye was the last to become affected, and the sight was not regained, the neuritis rapidly passing into a total atrophy. The ophthalmoscopic findings were very slight. In the remaining cases the visual disturbances were not excessive, although in some instances there were gross ophthalmoscopic changes.

It is highly probable that a very large propor-

tion of the cases classed as primary optic atrophy of syphilitic origin, are really cases of consecutive atrophy resulting from a former neuritis, in which the visual disturbances were not severe enough to cause the patient to seek medical advice.

One patient recently under observation on account of asthenopic symptoms resulting from an error of refraction, had a well defined neuroretinitis in the left eye. The vision was 20/30 and there were characteristic changes in the form and color fields. The patient denied any specific history, but his serologic test was a frank positive. It is highly probable that consecutive atrophy would have eventually ensued had the neuritis continued indefinitely without treatment.

All cases of disease of the optic nerve have had intensive treatment, with intravenous salvarsan, and in no instance was there any evidence of injury to the diseased nerve. On the contrary, very striking improvements have resulted in a very short period of time. The quick result obtained with salvarsan is a very decided advantage in dealing with syphilitic optic nerve disease, and it is to be hoped that the prevalent belief that the use of salvarsan is dangerous, in the presence of optic nerve complications, will soon be dispelled. A case of advanced atrophy which is rapidly approaching total blindness is not easily convinced that his only salvation is in energetic treatment, when he has been informed that the treatment is dangerous, and in the probable event of his becoming blind, he attributes his misfortune to the treatment and not the disease.

In one case of interstitial keratitis in a woman twenty-six years of age, an alarming optic neuritis developed after the third dose of salvarsan, but subsided without leaving any untoward results.

In the cases of paralysis of the extra ocular muscles, as in diseases of the optic nerve, we are in the field of neuro-syphilis, and the blood Wassermann findings are not always reliable, and have to be supplemented by an examination of the spinal fluid, in the absence of positive history and other clinical evidence.

Out of thirteen syphilitic paralysis of the muscles supplied by the third nerve, five yielded negative blood reactions. None, however, were complete paralysis of all the muscles supplied by the third nerve. Four were transient paralysis, coming on suddenly, and disappearing without treatment in a few days. One was a persistent partial ptosis of the upper eye lids of both eyes. The eight cases of complete ophthalmoplegia all yielded positive blood Wassermanns. One case claimed a slight trauma as the exciting cause, and

recovered damages for the loss of eye sight resulting from an accompanying optic atrophy.

In the six cases of paralysis of accommodation, one proved to be syphilitic, and the remaining five were post diphtheritic.

There was one primary lesion of the lower tarsal conjunctiva, in a girl eighteen years. The true nature of growth was not recognized until secondary rash appeared.

There was one case of swelling of the right lachrymal gland which had been present for eight months in a woman thirty-eight years of age, with a frank positive Wassermann reaction. The swelling of the gland rapidly disappeared under anti-syphilitic treatment.

The one case of pulsating exophthalmos had an injury, a blow upon the head, as an exciting cause.

The question arises, after having established the diagnosis of syphilis, as to whether the systemic infection has any relation to the local disease of the eye. In some individuals the blood remains Wassermann positive, after very extensive anti-syphilitic treatment, and it is a well established fact that women of this character bear normal children, and the presence of a disease of the eye, developing after adequate treatment, should not be attributed to the systemic disease.

In the diseases of the cornea, one patient out of twenty-two phlyctenular cases, had a positive Wassermann. The phlyctenuloses developed after the patient had been under treatment for a year, and it is highly probable that the phlyctenuloses had no relation to the syphilis.

In the list of cases of senile central choroiditis, there were three cases out of thirty-seven, who were syphilitics, and in two cases the syphilis probably did account for the early appearance of senile changes, and had a remote influence on the senile choroiditis, but as a general rule central senile choroiditis can not be attributed to syphilis.

It is also probable that one of the cases of keratitis profunda did not have any relation to the systemic disease.

As a general rule this problem will not present many difficulties and in the presence of a doubt, the anti-syphilitic treatment will quickly decide the question.

Discussion

Dr. J. E. Reeder, Sioux City—Just before the session opened, in a short conversation with Dr. Gratiot, I requested from him that I would like to have some information upon his subject, as the title of his paper seemed to cover a large field when it comes to ophthalmology. He stated that he expected very little discussion as he had covered the field quite

thoroughly and I agree with Dr. Gratiot,—he has covered the field very thoroughly. I also wish to congratulate him upon the manner and persistence in which he has taken up the Wassermann test with children. It has been my experience that it is not so much trouble to take the Wassermann from the child but is a difficult problem to get the parents to submit to a Wassermann test. In thinking of the eye in connection with syphilitic affections, it is important that we remember, first, the frequency of involvement, and second, the importance of such involvement, not only from the angle of diagnosis and treatment, but from the standpoint of the future of the patient both socially and economically. A positive Wassermann should call for an examination of the eyes and careful follow-up of the visual behavior such as vision, fields, etc. Failing vision of obscure origin, no matter how slight, should call for Wassermann tests of both blood and spinal fluid. It is not generally recognized that a lymphocytosis of the cerebrospinal fluid is often present very early, even in the primary stages and before there are many secondary signs. Nicolau found this true in eighteen cases out of fifty-one. As you know in the past, text-books have attributed 75 per cent of the cases of iritis due to syphilis. No doubt most of you are familiar with the work of Brown upon iritis. He reported, a short time ago, a series of 100 cases of iritis occurring over a period of observation of about three years. Brown's investigations resulted in the discovery that only 25 per cent of the cases of iritis are of syphilitic origin and thanks to the Wassermann, this enables us to treat our cases in a much more rational way than in the past. On the other hand, a positive Wassermann does not mean the iritis is necessarily a syphilitic iritis or a negative Wassermann mean it is not a syphilitic iritis. To emphasize the fact, I wish to report a case, sometime since, who was suffering from a syphilitic infection, Wassermann four plus. She had an active gonorrheal vaginitis, active tubercular foci in the lungs, she had a very severe iritis bilateral secondary glaucoma. It seemed, regardless of what was being done for her, such as regular routine treatment for iritis and trephine both eyes for glaucoma, she was going to the tragic end of blindness. She had a number of very bad infected teeth and in our dilemma we cleaned house. At the end of three weeks time, iritis had entirely cleared up and her vision was restored to one-half of normal. This only goes to show that not one of these three general diseases she was suffering from produced the iritis but as you all know any one of them is a prime factor in the etiology of iritis. I report this case simply to show that we should always be on our guard before definitely stating whether or not an iritis is syphilitic regardless of the reaction of the Wassermann. I feel that Dr. Gratiot has taken up the subject very thoroughly and is to be commended as most certainly he has given us valuable information in routine Wassermann as applied to ophthalmology.

OPPORTUNITIES AND MEANS OF GIVING PATIENTS CONSULTING THE SURGEON A BETTER SERVICE*

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Modern surgery is, of course, established on a firm basis and its accomplishments recognized. However, it is continually being subjected to criticism from the laity, and the presence among us of such cults as Christian Science and Chiropractic shows that we are lacking in some feature of our work. Some part of our alleged deficiency is, of course, due to a lack of education of the public to the recent advances in medicine and surgery. From a surgical standpoint, a great work in this respect is being done by the American College of Surgeons. The fact remains that we, as surgeons, have not at all times given the patient consulting us the service to which he or she is entitled. First we have failed from a diagnostic standpoint in promising the patient relief from a great variety of symptoms by the simple correction of some anatomical or pathological variation from the normal, a tradition from the old days when removal of the ovaries was thought to be a cure for almost everything. We have failed to recognize and make known to the patient the nervous origin of many of these symptoms and the impossibility of relieving them solely by correcting surgical pathology. Secondly, we have failed to give adequate post-operative management for at least a year or such period as is necessary to the given case. If we could attain a more ideal position and have these problems met fairly and squarely by the bulk of the profession, much of the criticism directed at modern surgery would disappear. This, then, is my purpose in bringing this subject to your attention today.

Most surgeons are cognizant of these problems and are meeting them, but too many must be unaware of them as we see unsatisfactory results almost daily, due largely, I believe, to neglect of these factors. A few disregard these problems because of mercenary motives, but this element is probably small.

I shall limit my discussion to the diagnostic and post-operative phases, and dismiss the operative phase with the understanding, of course, that it will be well done. In fact I believe surgical technique is better in general than surgical diagnosis.

In the diagnostic phase I wish to emphasize the

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matter of neurosis because of its prevalence and importance. White and Jelliffe state in their text that "Neurosis constitutes perhaps the most widespread form of disease. Persons quite unaffected in this way certainly form the minority of the general population." From observations and experience, I believe this statement to be quite correct. Moreover, I believe no other disease goes more unrecognized and no other class of patients more poorly advised. Other diagnoses such as tonsillar, dental and sinus infections, arteriosclerosis, endocervicitis, endocrine disturbances, and others additional to the main surgical diagnosis, demand, of course, the most careful consideration, but no more careful than that which should be given to a possible neurosis. I believe it can safely be said that there is far greater omission in the recognition and advice concerning the nervous side of a patient than in the other conditions just mentioned under "additional diagnoses." In the relation, then, of neurosis to surgery, I have divided the cases that consult the surgeon into four groups—namely: (a) surgical lesions without neurosis; (b) definite surgical lesions with neurosis; (c) indefinite surgical lesions with neurosis, and (d) frank neurosis.

Group A. Definite Surgical Lesions Without Neurosis—This group is comparatively simpler in every way than the others because it deals with cases that present something definite and uncomplicated. For instance, a patient fundamentally robust comes to us with symptoms of kidney stone, but no other complaint. After an uncomplicated renal calculus is removed we soon have a 100 per cent result.

Group B. Definite Surgical Lesions with Neurosis—In the event of distinct pathology and definite neurosis a case becomes a greater problem diagnostically and post-operatively. The physical part must be corrected and the neurosis must be recognized, the cause of the latter must be determined and it must be treated in some such way as will be discussed later. To give a concrete example, let us assume that a patient has chronic cholecystitis which constitutes about 50 per cent of the total disturbance, the remaining 50 per cent of the trouble being neurotic in character. By correcting the surgical lesion only and disregarding the neurosis, you are giving only a 50 per cent service and consequently your patient will obtain only a 50 per cent result, and frequently he will be dissatisfied by the persistence of symptoms which have no relation whatsoever to the gall-bladder pathology.

Group C. Indefinite Surgical Lesions with Neurosis—It is oftentimes extremely difficult to

know whether a patient belongs in this group or in Group D (frank neurosis). It is obvious that an indefinite surgical lesion can be so covered up by a neurosis that it becomes extremely difficult to recognize. However, patients that fall into this group as a rule present "a something" that is different, in that the presence of a lesion is suggested—the same as the patients in Group D present "a something" that points away from anything organic. Indefinite gall-bladder or appendix pathology for example, is difficult enough to diagnose in the absence of a neurosis, but when masked by it there are no more puzzling problems in surgery.

Patients in this group may have to be under observation and study for various periods, sometimes a year, before it is possible to arrive at a definite diagnosis. There will be even then a certain number that remain undetermined. This applies particularly to young girls of from about seventeen to the early twenties. During this period of observation one should not lose any time in correcting the neurosis because there has been no doubt of its presence, in fact, it is possible that it may account for all of the trouble in question. The matter of the presence of an organic lesion is only under suspicion. With improvement of the neurosis the symptoms under suspicion usually disappear also, if they have been of neurotic origin only, whereas, if they are of somatic origin they may become more definite. These patients are in no way endangered by the delay, if we may call it delay, because if pathology is really present it is, in nearly all these extremely doubtful cases, not very active. Moreover, they are under observation and can be given attention in the event of a genuine emergency. I say genuine, because occasionally these cases drift away, and not so infrequently, we hear of one being operated as an emergency case. The best example of this is the case of a so-called chronic appendicitis which is rushed to the hospital as an emergency with the patient thoroughly frightened by the much dreaded term appendicitis. To be sure pathology is sometimes found in some of the cases in this group that drift away. I can recall a few of them. If so, we usually hear about it, whereas if nothing is found, an effort is seldom made to notify us. A certain percentage of these cases will eventually return because if no pathology has been found they are usually made worse by the operation. It is not alone that their already traumatized nervous system has been still more injured, but in some instances, the normal physiology may be greatly disturbed, as for instance, in doing a gastro-enterostomy on a patient in whom there are no indications for this procedure.

If, after careful study of this doubtful class, a suspicion remains that there may be a pathological lesion, it becomes good surgery to advise an exploratory laparotomy, but the patient must fully understand the situation. The leeway of exploratory operation must not be taken advantage of to cover up inferior diagnostic work.

It is obvious that patients who fall into this group are particularly unfortunate because of the difficulty in definitely placing their ailments. It is they, with those in Group D, (frank neurosis) who frequently are unnecessarily operated.

Group D. Frank Neurosis—I attempted to determine from our records the percentage of cases passing through our hands that are neurotic only, that is, without presenting any possible evidence of organic disease. After a thorough consideration of this proposition I felt that I did not dare to present such statistics because of the unknown quantity that necessarily must exist in every patient, for instance, tonsils that are infected, without any definite known means of determining it. (Personally, I know of nothing more difficult.) Slight dental infections, other foci of infection, and endocrine disturbances are examples of conditions that may exist and yet their presence be very difficult to demonstrate. In view of the recent publication of Cotton's work pertaining to the relationship of foci of infection to insanity, it is possible that we should be more cautious than ever in deducing that infections may not cause a neurosis. Individuals who are fundamentally of a nervous temperament are more sensitive to all kinds of influences, including the infections and toxemias. On general principles, all possible sources of trouble must be removed in every patient whether neurotic or not. It is quite likely then that some of the cases that are today considered as purely functional may, in the future, be regarded as resulting from some deeper underlying cause such as a disordered endocrine function. To cite a concrete example. I have in mind a woman well past the menopause who, up to that time, was extremely nervous. Since that time she has been deliberate and calm and an entirely different woman. Her mother gave the same history, and her daughter, who is a young married woman, is evidently having a similar disturbance. However, it is my belief that by far the greater percentage of neurosis is caused, not by physical derangements but, by extrinsic causes.

Although, as above stated, it would hardly be scientifically possible to determine an exact percentage, I believe it conservative to assume that a worth while percentage of cases that consult

the surgeon is frankly neurotic. If this is so it is obvious that patients should be understood mentally, psychically, and socially as well as physically. In other words, an understanding of our cases must be obtained from a broad point of view. One can do no worse than operate on patients that comprise this class. To tell them there is nothing wrong with them is nearly as bad (and an admission that we do not know what we are talking about). They are ill and will do anything for relief. They must have advice and no one can give this advice more effectively than the surgeon because he has been consulted on the assumption that the complaints are based upon a surgical lesion.

Generally speaking, this class of patients presents the widest range of symptoms, usually multiple, but frequently will complain of only one. The most common, for example, is pain in the right lower quadrant which is interpreted to be appendicitis and the reason for consulting the surgeon. The history, however, does not ring true of appendicitis and, therefore, is the hint that the pain is only a local manifestation or one symptom of a general condition. Usually the multiple symptoms referred to are brought out only upon questioning. These symptoms are so constant and uniform that they constitute almost a syndrome and occur quite generally in the following order of chronicity and gravity: nervousness, fatigue, aching in the back of the neck, headache and a feeling of confusion, backache, and some gastrointestinal disturbance such as fickle appetite, indefinite gastric distress, and constipation. There may be many others such as insomnia, choking, tingling, numbness, in fact almost any conceivable complaint. The complete syndrome exists, of course, only in the well advanced cases.

This class of patients is nearly always, by heredity, of a nervous temperament, fundamentally not robust, usually the mental rather than the physical type, and, of course, of a sensitive nature and very easily disturbed and upset. They are energetic and ambitious and want to see things move, but do not have the necessary strength and endurance to keep up with it. The skeleton is usually small and slender and the general body form of the frailer type. They may be well nourished, in which case the first impression may be that they are of the robust type, but upon closer examination will present definite signs of finer texture. The hair is fine and often sparse, the skin is thin and of fine texture, the features are fine cut, and the extremities are small. They are not built to withstand hardship. Under strain and stress, mental or physical or both, they develop

the above mentioned symptoms one after the other until the entire syndrome appears. This, of course, may go on to the breaking point.

Now there is always a reason for the disturbance and the cause or causes must be unearthed. If it lies only in an erroneous way of living, which is frequently the case, it is an easy matter to determine, whereas, if it is complicated with social conflict it may become quite difficult. Whatever the cause may be it is usually not realized by the patient, which means that he does not understand himself. This is an extremely important factor.

The high strung, restless, nervous and ambitious individual who tends to over-step himself, may only have to be instructed to live within his limitations in order to have good health. I find the expression "to keep the brakes tightened up" a very practical one. They remember it.

The mother of children who does all her own work, including the care of her children, night and day, probably year after year, with little or no vacation or rest, is a frequent problem. She is tired out and stale and needs rest, diversion and recreation. Circumstances do not always permit ideal management of this class. However, the best possible procedure must be carried out. If this tired mother is fundamentally robust she can soon be restored to good health. If she is frail, the problem is not such an easy one. If, moreover, such a case is augmented by conscious or sub-conscious social conflicts the load is still greater. The analysis of the complicated cases becomes difficult since it so often involves matters pertaining to private life, which include sexual relations and so on. Even so, the cause can nearly always be ascertained if the patients are made to realize that interrogation is not to satisfy a curiosity, but for the purpose of obtaining data to be used in helping them. In the case of a married woman, it is often a good procedure to talk to the husband also, as he too should have a better understanding of conditions. He often does not realize that his wife is working day and night (in the case of children), and that she is physically worn out and mentally fatigued as a result of too close application over a long period of time. The doctor can bring this to his realization, whereas, in most instances, it would be quite impossible for the advised patient to do so. In case of social conflict we have asked for assistance from priests, ministers and social workers with worth-while results. In the main, it may be said that social conflicts present by far the most difficult problems.

In the case of aches and pains, so often present, it is usually difficult for the patient to understand

that they can be the result of nervous fatigue. For the pain in the right side, which has been interpreted by the patient as appendicitis, the best argument I have found is to tell them that it would be just as logical, in their case, to operate the back of the neck for the aching there, and the head for the headache.

In nearly all types of neurosis bad mental habits result. This must be pointed out emphatically. I tell mothers who have become irritable and inclined to scold that unless this bad habit is corrected their children will be the same in their families, and unless they desist they will, from now on, be wishing it deliberately upon them. I also tell them that, with such unpleasant memories, they cannot expect their children to respect them. To patients who are inclined to be religious I point out that it is a sin to behave as they do, and to others that their mental state is a habit and as bad, if not worse, than the liquor or drug habit. I find these very effective arguments. In cases of long standing, however, the mental habits have become so fixed that it is a difficult matter, and sometimes impossible to correct them.

I find many patients dissatisfied, restless and nervous because they are in the wrong vocation. They feel that they are not as efficient as they might be, they are not at peace with themselves and consequently are working under tension. In this case a change of occupation should be advised if practicable.

One could go on discussing etiological factors, but it is not within the scope of this paper to do so. The few mentioned above will cover, after all, a large percentage of the neuroses as we meet them in our work. The surgeon himself cannot do all the "straightening out" of these patients, but he can work in conjunction with the patient's physician, or can refer him to one who is especially capable in managing this class. Nevertheless, I wish to emphasize that I consider it the surgeon's duty to interest himself not only in the recognition of the neuroses and in ascertaining the cause, but also in giving advice. He must not consider his specialty so highly specialized that he dare not give his patients good sound medical advice.

Post-Operative Management—This is an extremely important phase, though very much neglected. Attempts have been made in various clinics, particularly in the East, to follow up cases for a time after operation with only fair success, as I understand it. The reasons given are that a large percentage of the patients will not report for one reason or another; they will not

respond to correspondence; they move about and, therefore, are soon lost sight of. I am certain that it is highly practical in a private surgical practice, particularly in the smaller and moderate sized cities where the territory served is more or less limited. In our own experience I can say that we have never instituted anything more practical and successful. We have the patient report three, six and twelve months after operation. Parenthetically it might be stated that these intervals are satisfactory. Besides this personal management we have, if possible, supervision by the family doctor since efficient cooperation and "cross-firing," so to speak, particularly in neurotic patients, is helpful to obtain the best results. This plan keeps us in close contact with the patient for a year. In some cases, as for example, carcinomas, we follow them longer. Upon dismissal from the hospital advice should be given regarding rest, exercise, diet, recreation, mental state and habits, and they should be warned against overdoing because experience teaches us that this is the chief stumbling block. Ambitious patients are prone to overdo. Moreover, from economic necessity, some are almost obliged to go beyond their limitations. Patients should be sent home well advised not to become introspective. It is well to instruct them in the matter of early post-operative aches and pains that may develop as a result of being active, for fear they may be interpreted as being of some serious moment. They should be given some definite ideas as to how long it is going to be until they are as well as they will be. The time, of course, will depend on the kind and degree of pathology, the extent of the operation, and the patient's general make-up as to whether they are fundamentally frail or robust. They should, of course, understand that they can be brought up only to their own level, whatever that is.

Post-Operative Reports—A survey is made of the patient's condition. If it is not satisfactory, why is it not? Usually the cause is found in failure to carry out the instructions given at the time of dismissal from the hospital. If a patient comes in unduly fatigued, one can be quite sure that he is doing too much or is worrying. In our experience, by far the most frequent trouble lies in overdoing. It is for this reason, together with further advice as to bad mental habits, if present, that we consider it of great advantage to see the patient after operation. It is only by keeping after him and, in some instances, even being quite severe, that the desired results are obtained. Additional pathology appearing in the records is re-

viewed and he is urged to have everything taken care of as soon as possible.

This follow up plan may provoke criticism in a few instances by the family doctor alleging that it takes the patients completely out of his hands. This claim, however, is unfounded as the patients naturally are always referred back to their physician for direct management. We find that patients are kept under control of their home physician better than before this plan was adopted as they are not so apt to drift away or go along without management of any kind. It gives us a better idea of what results we are getting, more particularly what results the patient is getting.

This service entails a great deal of extra work for the surgeon, but I regard it his duty to do so. It makes lasting, faithful and loyal friends of his patients and I am sure the satisfaction obtained pays one well for the effort expended. Moreover, I believe this extra service often makes the difference between fair and good results.

HYPEREMESIS GRAVIDARUM*

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Mr. President and Members of the Polk County Medical Society:

I wish to briefly bring to your attention, and for your discussion, a subject that is as old as the medical profession itself (Hyperemesis Gravidarum). From the dark ages of ancient medicine down to modern medicine of today pregnant women have suffered from this condition and many have paid the price with their life, because of lack of knowledge of its cause and means to combat the effects of the emesis incident to the gravid uterus; and many an unborn child has been sacrificed because of the inability of the profession to cope with this distressing condition known as Hyperemesis Gravidarum. In the early years of what might be termed modern medicine patients suffering from this condition were left to fight their own battles. If they survived the ordeal well and good, if not it was, to say the least, most unfortunate. Medical writers have given us very little that would guide the doctor in the care and management of this grave malady, and it is only in recent years that real investigation into the cause and effect of the condition, that we have been able to reduce the mortality to a very small per cent when compared with the high mortality of former years. In reviewing the literature I find that about the year 1852 ap-

*Read before the Polk County Medical Society.

pears one of the first reports of a series of cases with an outline of treatment which was offered as a relief for these unfortunate cases. A French physician (Dubois) made this report, and recommended at that time the emptying of the uterus as a cure for all cases; and strange as it may seem, in view of the fact that the mortality, after emptying the uterus was greater than in a given number of cases that were not treated in this manner; and still a more strange fact remains, that in view of this record the emptying of the uterus, therapeutic abortion, became the adopted method of treatment and to some extent this method of treatment still continues by many of the profession. According to most authors in the past the vomiting of pregnancy was grouped in two classes, the physiological and toxic, and were treated as separate and distinct groups, each requiring special care and management in their treatment. Following this came the opinion of (Williams) in about the year 1900 in which he says that vomiting of pregnancy lasting longer than six weeks, the period of physiological vomiting, the condition should then be determined as one of pernicious vomiting and treated as such. Williams also considered two types of pernicious vomiting, the nervous and toxic, this is approaching very near the exact status of the case, and has been accepted in a general way. We find in the literature of more recent date however that Hurst of Oxford has placed the entire group of cases of pernicious vomiting under one heading, hysterical, and suggests that all cases going beyond a period of six or eight weeks of physiological vomiting be termed hysterical, and gives the reasons for his opinion that practically all cases will be cured by isolation and psycho-therapy, excepting a very few cases that may be termed as toxic, which are in reality a result of some hidden pathology. Unfortunately there has been very little written on this subject when one considers the great number of cases; therefore, after reviewing the literature, and from my own experience and observation, I wish to adopt a different classification of these cases and they will be treated according to this classification.

Vomiting incident to the pregnant uterus, I classify in three groups:

First—The physiological vomiting.

Second—Pernicious vomiting, which includes the toxic and hysterical.

Third—Malignant vomiting.

My reasons for this classification are that the first two groups will include the majority of cases, and as such can be managed and actually

cured according to the treatment that will be outlined later. But there still remains a small group of cases that go beyond the stage of pernicious vomiting, and pass into a more grave condition. It is this type of case to which I choose to apply the term malignant vomiting. This group always occur in the latter months of pregnancy, and becomes one of profound prostration suffering from a most intense acidosis and mental derangement and an ammonia co-efficient that is entirely out of proportion to that which is compatible with life.

Etiology—It is now a well established fact that vomiting incident to pregnancy is primarily a question of corpus luteum; that is, every normal woman is constantly absorbing corpus luteum, and with the advent of pregnancy this absorption ceases, and now gradually increases until it has reached its acme, which is usually about the third month. From this time on the absorption of corpus luteum again takes place and with it the disappearance of nausea and vomiting, and the case now assumes the normal aspect of pregnancy. In the etiology of the second or pernicious group, there are many conditions acting as a direct factor in the case.

First—The mal-positions of the pelvic organs as retroflexions and lateral deviations of the uterus, resulting from adhesions and scar tissue from former operations.

Second—Pathological conditions existing in other organs of the body, as heart affection, chronic infection of the gall-bladder, appendix, tonsils and teeth, necrosis of the central lobes of the liver, and renal changes manifest by an actual necrotic condition of the epithelial lining of the convoluted tubules of the kidney, any or all of these existing conditions acting by their toxicity and their reflexability tend to disorganize the entire nervous system, and with a gradual increasing general acid condition of the system, and a urine very heavily laden with acetone and diacetic acid. In giving the etiology of the third group, we must bear in mind all the etiological factors of the pernicious type, and added to this we are always dealing with a patient who has completely overtaxed her physical strength, either from too many family cares and household duties and at the same time trying to carry out suggestions of some solicitous friends who have advised her to keep active by hard work and strenuous exercise and a good diet, until she has completely exhausted her physical resources and undergoes a complete physical and mental collapse. It is in this type also that we find a slow gradually increasing icterus

which should be looked upon as a very grave omen, because with the constant elimination of bile in a urine already overlaid with acetone and diacetic acid, there soon takes place a destruction of the parenchymatous cells of the kidney which are very apt to be more or less permanent.

The symptomatology of the various types of vomiting of pregnancy, may be discussed collectively in a general way, as the majority of pregnant women suffer from various degrees of vomiting in the early months of their pregnant condition, most of whom soon return to practically normal. Quite a number however, grow more severe; their appetite becomes depraved and with it the distressing acid sour stomach which is always filled with gas, the skin extremely dry and harsh, the urine diminishes in quantity and is strong in acetone and diacetic acid with a trace of albumin and an inactive intestinal canal, which predisposes the absorption of toxins. The patient becomes morose and discouraged, loses confidence in herself, friends and even her physician, and despairs of the ultimate outcome of her condition. They also suffer from photophobia and various degrees of neuritis, and in the malignant type they develop a marked jaundice and actually become deranged. All of these patients pass through what appears to be a definite cycle extending over a period of several days, and it is this cycle which if observed closely will be an aid and a guide in the management and treatment of the case.

Treatment—The pregnant patient is entitled to and should receive the best care the profession can give, unfortunately they too often have been sorely neglected and it is an outgrowth of this neglect that many of these cases develop.

First—Complete isolation of patient from husband and friends, good elimination through the kidneys and intestinal canal must be accomplished, by giving plenty of water with sodium bicarbonate and sodium benzoate, by mouth primarily, however, it may be necessary first pass the stomach tube and wash the stomach and then give several ounces of water ($\frac{1}{2}$ pint), through tube, containing 3÷ sodium bicarbonate and 3 s.s. sodium benzoate, follow later with a purge as castor oil or saline, complete flushing of lower bowels with an s.s. enema, and later with an alkaline solution, withdraw all forms of food by mouth and use rectal feeding, giving between feeding sodio bromid 40 gr. dose by rectum in conjunction with 20 gr. chloral, and 1000 cc. water. Glucose and peptonoids are probably the

very best forms of food for rectal feeding for these patients and may be administered by the following formula:

Glucose, 60.
Beef peptonoid, 100.
Calcium chlorid, 0.3.
Sodio chlorid, 4.0.
Sodio bicarbonate, 3.0.
Dist. water, 1000.

This rectal feeding may be carried on for several days, then discontinue and begin feeding lightly by mouth, principally carbo-hydrates, the administration of ovarian extract by mouth, also corpus luteum either by mouth or hypodermic injection, the severity of the case governs the amount given. By closely observing the cycle of the individual case, alternating rectal feeding with a small amount of mouth feeding, the patient will be carried along through the pernicious type for several months nearer the termination. And then making a premature delivery, and depend upon the incubator for the preservation of the child.

This paper is offered with two principal objects in view:

First—That pregnant women and the field of obstetrics should receive more consideration and better treatment.

Second—It is a plea for the family physician to improve his scientific knowledge and his working technic, that he may be able to give this class of patients the treatment they rightly deserve.

Sequel—The sequel of these cases are many, various types of neuritis, loss of memory, mental derangement, and one attack predisposed to another in future pregnancies.

I wish to offer the following conclusions which are definitely fixed in my mind:

First—Hyperemesis Gravidarum can be cured; if handled properly can be carried through to a satisfactory and successful termination.

Second—The treatment of Hyperemesis Gravidarum is not making a diagnosis and doing a therapeutic abortion.

Third—The practice of obstetrics belong to the family physician and will very rightly always remain so, for he is the one knowing the mother's medical peculiarities, can offer her the best results.

Fourth—The cooperation and wise council of the neurologist is necessary in this group of cases for he is able to render suggestive treatment and psycho-therapy which is a great aid in the management of Hyperemesis Gravidarum.

A CONSIDERATION OF SOME PRACTICAL PROBLEMS IN THE ARTIFICIAL FEEDING OF THE NORMAL BABY*

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Notwithstanding the propaganda in recent years for the promotion of breast feeding and the demonstrated possibilities of keeping the greater percentage of babies on the breast for from three to nine months, we are still confronted with the problem of either partial or complete artificial feeding with sufficient frequency to engage our earnest attention relative to the best methods of carrying this out.

The subject has been made so complicated in the past that it has been the bug-bear of the medical student and practitioner alike and they have been inclined to give up in despair, take the path of least resistance and tell the mother to purchase a proprietary baby food and follow the directions on the package. Fortunately in recent years a somewhat better understanding of this subject has been reached and the tendency, especially in this section of the country, for the use of more simple formulas has been gaining ground.

While I have nothing new or original to offer, yet an inventory of our present knowledge of some of the practical problems of artificial feeding may aid us in conserving the lives and health of our children, which is the most important conservation problem facing this country today.

Confronted with the necessity of instituting artificial feeding, the first question we must decide is the kind of food to use, and when we seek a substitute for breast milk there is practically only one to consider and that is cow's milk. While it differs in many ways from breast milk yet from a commercial standpoint and from clinical experience it is the best substitute for the normal baby and stands far above any of the proprietary foods no matter what claims may be made for them or how highly advertised they may be. None of the latter can contain anything that milk cannot contain as far as food goes and milk contains the different food elements in a proportion that can be more readily modified to suit the demands of the infant.

While we do not say that some of these proprietary foods are not of value for short periods of time, or for use in conjunction with cow's milk, we do say that they cannot be used as a substitute for breast milk alone for any length of time without injury to the growing infant. If

they are used their composition should be known so that in their modification their different food elements would be properly balanced. This is hard to do for most of them contain an excess of carbohydrates and when they are diluted to reduce this to a proper amount the other ingredients are lowered to too great an extent. The condensed milks all have an average composition of about 9 per cent fat; 8 per cent protein and 55 per cent of sugar. Using one part of this and two of water gives us 3 per cent of fat, 2.6 per cent of protein and 18 per cent sugar which may be about right for the first two ingredients, but very few babies would tolerate 18 per cent sugar for any length of time. If we dilute still further and reduce the sugar to 6 or 7 per cent, which is about what the average baby would tolerate in a mixture of this kind, the fat and the protein are reduced to 1 per cent and less which makes a food entirely too weak for proper growth and development.

The unsweetened evaporated milks have a percentage composition of about 9 per cent fat, 10 per cent sugar, and 7 per cent protein. Diluting these to get the fat and protein to a proper amount reduces the sugar too low. Sugar may be added, however, and this probably is the best substitute if fresh cow's milk cannot be obtained. Horlick's malted milk has a percentage composition of fat 9 per cent, protein 16 per cent, and sugar 67 per cent. Mellin's food, fat 0.16 per cent, sugar 80 per cent, protein 10 per cent. It is impossible to dilute these and use them alone and have a balanced food. Their principal value is to use as sugars along with cow's milk. Another class of foods such as Nestle's and Eskay's contain in addition to a high sugar a high starch content and are only of use in modifying cow's milk.

The dry milks now on the market are proving quite satisfactory. Most of them are low in fat though in proportion to the other ingredients, as a high fat content interferes with the drying process. They are especially useful when traveling.

In view then of the importance of cow's milk as a substitute for breast milk in artificial feeding let us review briefly its composition and its main points of difference from breast milk.

Cow's milk is composed of protein, carbohydrates, fat, salts, and water and the recently discovered and much discussed accessory food factor or vitamin. The salts and water have been considered of little importance in the feeding of children and in the treatment of nutritional disturbances until recently when they have assumed much greater importance. The protein exists in both breast milk and cow's milk in two forms:

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casein, and albumen and globulins. Casein is the substance that forms thick curds when milk is coagulated and the albumen and globulins form a scum on milk when it is boiled. In the composition of cow's milk, protein constitutes approximately 4 per cent, while in breastmilk it constitutes 2 per cent. Not only is there this difference in total quantity of protein, but the casein, and albumen and globulins are in different proportions.

According to analysis given in Hill & Gerstley's¹ lectures on infant feeding in cow's milk the casein constitutes over 85 per cent and albumens and globulins over 14 per cent, while in breast milk the casein constitutes over 61 per cent and albumens and globulins over 38 per cent. Raw cow's milk casein precipitates in firm thick curds; breast milk casein in only the finest curds or none at all. So from these differences it can be seen that it is impossible to modify cow's milk protein to make it identical with that of breast milk.

Fat, which is the most variable constituent of milk, exists as an emulsion of fat droplets, and in about the same percentage in both breast and cow's milk. The fat of the latter, however, contains more of the irritating lower fatty acids; the fat droplets are larger and there may be still other variations.

The carbohydrates, as far as we know, are alike except that in breast milk they constitute about 6 per cent and in cow's milk about 4 per cent. In both, they are represented by lactose or milk sugar.

The salts which in connection with protein furnish structure to the tissues and are vitally concerned in nutritional disturbances constitute 0.2 per cent of breast milk and 0.7 per cent of cow's milk. Not only is there this great difference in quantity, but also in the kind of salts present. The salts of cow's milk are chiefly calcium and magnesium; those in breast milk, sodium and potassium; so we cannot modify cow's milk so as to make the salt content identical to that of breast milk.

The water content is practically the same—88 per cent in breast milk and 87 per cent in cow's milk.

While we see from this comparison that we cannot modify cow's milk to make it identical with breast milk, yet we can modify it so as to fit it to the digestive capacity of the average normal infant.

At the present time in this section of the country the method of modification consists mainly in the dilution of whole or skimmed milk, the addition of carbohydrates and boiling of the mixture. In the East the percentage method with cream,

top milk and skim milk, I believe is still followed. We find the former method much simpler and quite as satisfactory. It also can be checked up by computing the percentage of the different ingredients if desired and also as to its caloric value.

Terry², of Cleveland, Ohio, has made a study of the chemistry of milk-curd modification in infant feeding and discusses at length the different methods—dilution; boiling; the use of alkalis; the use of cereals, carbohydrates, etc. In our modification we have been using the dilution, boiling and the use of cereal waters; seldom using alkalis. While there may be no objection to their use that cannot be overcome, yet Hess and Unger³ have shown that alkalization of the infant's food may affect the vitamin. It also complicates the formula and results seem to have been very satisfactory without them. We found that we were using lime water in too small an amount to be of much value and that in order to affect the curds it had to be added to the extent of 25 per cent to 50 per cent of the mixture. In this strength, if there is a poor assimilation of fat which often occurs, there may be an increased tendency to the formation of soap stools from the combination of the calcium and fat and a weight disturbance results.

Sodium citrate has also been used and in the strength of two grains to the ounce prevents the formation of large curds. The same objection may be raised to its effect upon the vitamin and it adds to the expense and complication of the formula. Sodium bicarbonate may be used in the same strength, but often disturbs the stomach and results in vomiting and its effect upon the vitamin would be the same.

Coming now to the modification by dilution with water or cereal water and so reducing all the ingredients in the milk. About 85 per cent of infants will tolerate quite a wide range of quantitative values in the components of the milk, fats, proteins, carbohydrates and salts, so there are no hard and fast rules and the individual baby has to be considered. There are several rules, however, that aid us in making up a formula.

We first decide upon the number of feedings for the twenty-four hours. While this is a matter of individual choice we find the four-hour feeding interval very satisfactory for the majority of normal infants. It can be varied according to special indications. The baby's stomach capacity we estimate to be two ounces more than the baby is months old up until the sixth month.

We figure roughly the milk content to be one-third of the mixture the first two months; one-half from two to four months; two-thirds from

four to six months; and three-fourths from six to nine months with whole milk after this age.

Another method of calculation is to allow an ounce and a half of milk to the pound weight of the child, or a child that is underweight for its age may require two ounces. Whichever rule we follow it is better to under-feed rather than over-feed until we know the tolerance of the particular baby.

After we have added the diluent and the carbohydrate we can then check up its caloric content which should be about 45 or 50 calories to the pound weight or 100 calories to the kilogram. We use an average of one ounce of carbohydrate for each ten pounds of the baby's weight. Usually using the plain cane sugar unless a more laxative effect is desired when milk-sugar is used, it being a simpler form of sugar, ferments more readily and thus is more laxative. If the baby objects to the sweetness, dextromaltos may be used as it is not so sweet. Recently Marriott⁴ of St. Louis has introduced corn syrup. It contains a higher per cent of dextrin which is a more complex carbohydrate, does not ferment so readily and can be given in greater quantities without being too laxative. Flour which has been partly dextrinized by browning, or flour-ball may be used for part of the carbohydrate if unable to give sufficient in the form of sugar or if the weight remains stationary.

Given then a normal baby three months old weighing eleven pounds we might compute his formula as follows: six feedings a day of five ounces each or two ounces more than he is months old. This equals thirty ounces for the twenty-four hour feeding. One and one-half ounces to the pound weight equals sixteen and one-half ounces of milk leaving thirteen and one-half ounces of diluent. This could be cereal water at this age. Before this we usually use plain water as their digestive capacity for starch is low before this. Adding an ounce of sugar for each ten pounds of weight we would add a little over an ounce. I usually use about a tablespoon of sugar for each ten ounces of mixture, or three level tablespoons for this amount. If too laxative the amount is reduced. If not laxative enough or if weight is stationary it may be increased. Rarely will the baby tolerate over 7 per cent on a simple milk mixture.

We have now our simple formula made up of whole milk, diluted with plain water or cereal water and carbohydrate added. Our next step is to boil this two minutes and then set in the ice box ready for feeding. This last step in the process of modification, namely boiling, we consider

very important for several reasons: first, it results in a sterilized food if properly cared for afterwards. When Gerstley⁵ calls our attention to the fact that milk is the only standard article of diet obtained from animal sources that we use without cooking, that it is the most easily decomposed of all foods, offers the best media for the growth of bacteria and is the most easily contaminated, we realize the importance of sterilizing and handling it with the greatest care for the infant whose sole diet it is. He quotes Rosenau of Harvard (professor of preventive medicine) as saying it is responsible for more sickness and more deaths than all other sewage. He is authority for the statement that in 1907 in Boston seventy-two cases of diphtheria and 717 cases of scarlet fever were transmitted by milk. In 1908, 400 cases of typhoid were due to this cause. In 1910 over 842 cases of scarlet fever and in 1911 over 2065 cases of septic sore throat originated from this source. In a study which he made of market milk in Chicago in 1910 he showed that 10.5 per cent of 144 specimens examined contained tubercle bacilli.

Secondly, it is more easily and completely digested when boiled than when raw. Joseph Breneman⁶ of Chicago, has demonstrated that boiled milk precipitates in the child's stomach in fine curds, whereas raw milk precipitates in large tough curds. That these large curds appear in the stools when the milk is fed raw and disappear when the milk is boiled. Boiled milk appears constipating for this reason because it is more completely digested and does not leave the residue for the bowel to act upon. Boiling the milk then has the effect of producing small curds and does away with the use of alkalis for that purpose. The objections raised to the use of boiled milk are its constipating effects and the destruction of its vitamins. Both of these objections are easily overcome by the use of orange juice and prune juice. Besides, Alfred Hess⁷ of New York has shown that it is the length of the heating process and not the degree that destroys the vitamins. Prolonged heating at 145° may destroy, while boiling for two minutes does not, while it is sufficient to destroy all organisms except spores. In the Just Roller process of making dry milk it is subjected to a high degree of heat for a short time yet retains its vitamins. It is probable, he thinks, that oxidation may have more to do with the destruction than the heat does and in prolonged heating or pasteurizing if it were protected from the air or oxidation, the vitamin would be retained.

As stated before we are just beginning to real-

ize the importance of the salts in the child's food and studies of mineral metabolism are being made. As yet we have no definite knowledge upon which to base our modification aside from simple dilution of the quantity in cow's milk. In the majority of infants this excessive salt intake probably does not harm—the surplus is not absorbed or is eliminated. In severe diarrheas or when there is an excess of fat or sugar in the diet, the salts are not well retained—especially sodium and potassium, and if all available alkalis have been drawn upon the infant breaks down its own tissues to furnish more of these substances. So like protein, water and carbohydrate, minerals are essential to life.

The child requires a higher percentage of water in its diet than the adult. In each 1000 c.c. of breast milk there are about 885 c.c. of water. The child uses between two and three ounces of water for every pound that his body weighs, while the adult uses about one-half ounce.

Keeping in mind these principles then, we find it not difficult to construct a formula for a simple milk and carbohydrate mixture upon which the average normal infant will thrive quite well. For abnormal conditions special foods may be required, such as albumen milk, lactic acid milk, buttermilk mixtures, etc., but the scope of this paper is limited to the normal baby.

SUMMARY:

1. There is still a necessity for knowledge concerning the best methods of carrying out artificial feeding.

2. Recently there has been a tendency for simplified formulas and a better understanding of the subject.

3. Cow's milk is still the best substitute for breast milk for the normal baby.

4. While, because of its marked differences cow's milk cannot be modified to make it identical with breast milk, it can be modified so as to adapt it to the digestive capacity of the average normal baby.

5. The salts and water which hitherto have been neglected are important factors in the nutrition of the child.

6. Simple modification of cow's milk by dilution, addition of carbohydrates and boiling proves quite satisfactory in the majority of normal cases.

7. While alkalis modify the curds, they have to be added in such a proportion that they may have harmful effects and the same results can be accomplished by boiling.

8. Simple rules—such as number of feedings in twenty-four hours; baby's stomach capacity

two ounces more than it is months old up until it is six months old, and one and one-half ounces of milk to the pound weight, and one ounce of carbohydrate for each ten pounds, aid us in making up a formula.

9. The kind of sugar added is governed by the desire for a more laxative or a less laxative effect or to suit it to the taste of the infant.

10. Feeding boiled milk is advantageous because it results in a safer food, which is more easily digested and the objections to its constipating effects and destruction of its vitamins can be overcome by addition of orange juice and prune juice.

11. Our knowledge of mineral metabolism is not sufficiently advanced to permit us to make any special modification in the salt content aside from simple dilution.

12. The child requires a much higher percentage of water in its diet than does the adult in proportion to its weight.

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SURGICAL DISEASES OF THE URINARY ORGANS; A PLEA FOR EARLY RECOGNITION*

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Most patients with so-called surgical diseases of the urinary tract have advanced lesions before a definite diagnosis is made. As a result extensive surgical interference is necessary to cure or improve them. Just what that means to the patient we all know. This condition is largely due to the fact that too much reliance is placed on the efficacy of urinary antiseptics, long continued bladder irrigation and similar treatment without first establishing a diagnosis.

Furthermore, those patients who have been diagnosed and treated for some abdominal condition, operated and reoperated without relief, later to be found with the pathologic condition in the urinary tract, are familiar types. At the Mayo Clinic over 50 per cent of the patients with right

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sided renal and ureteral lesions have had one or more futile operations performed.

Up to the introduction and improvement of modern urologic means of diagnosis, such diagnosis was difficult or impossible, but with the x-ray and cystoscope almost all urinary lesions can now be early and accurately diagnosed. As a result fewer extensive surgical procedures are necessary and fewer malignant diseases are engrafted upon primarily benign lesions.

Cystitis as a disease entity probably does not exist except as it occurs following bladder instrumentation and in cases of trigonitis in the female. It is merely a symptom and indicates some other condition such as a pyelitis, renal stone and kidney or bladder tumor.

Urinary tract symptoms and signs other than possibly pain, tenderness and mass are definitely limited to the urinary organs and indicate at once the system involved. Frequency (day or night), hematuria, pyuria, and dysuria are symptoms seldom caused by lesions other than those of the urinary tract. Any case with bladder symptoms not responding after a few weeks of general treatment with urinary antiseptics should have a definite diagnosis made.

Such diagnosis is arrived at by the following measures:

History—A detailed history is important, inquiring into acute attacks and their nature with general as well as urinary symptoms.

The symptoms between attacks merit careful consideration. Frequency, painful urination, incontinence, hematuria, pyuria and inability to void are the most important.

Physical Examination—The physical examination is often negative in genito-urinary lesions. However, a general examination to rule out tuberculosis, heart disease, tumor metastases, etc., is important. In the kidney region mass, tenderness and rigidity on palpation as well as tenderness on heavy percussion are the chief signs looked for. By abdominal, rectal and vaginal palpation much can be learned about the bladder. Here the ruling out of an enlarged prostate is necessary. The lower end of the ureters are palpable in the female and stones may occasionally be felt.

Urinalysis—Here negative findings mean nothing as the patient may have a stone in the ureter, a closed pyonephrosis, etc., with a normal urine. In the female only a catheterized specimen is accurate as contamination is otherwise unavoidable. Catheterization is also valuable in the male to determine the presence of retention in

prostate cases. Albumen, pus and blood are findings of value in the urinary specimen. Blood examination yields little of value except the white count in infected cases.

X-Ray—With the Bucky diaphragm much can be learned by x-ray examination, but first proper preparation is necessary. A thorough purge and enemata to remove the gas are important if good films are to be secured. With the film the size and shape of the kidney, the presence or absence of stone shadows (85 per cent are visible) are determined. Localization often determines whether a palpable mass is the kidney or an extra renal growth.

Cystoscopy—By means of the cystoscope the bladder is examined for inflammation, local or general, stone and tumor. The ureteral orifices are inspected for size, shape, patulence and evidences of inflammation. By catheterizing the ureters one can determine, first, the presence or absence of obstruction due to stone, stricture, tumor or kinking; second, by scratches on the wax tip of the catheter the 15 per cent of stones not visible in the film can often be discovered; third, a specimen of urine can be secured from each kidney and a chemical and microscopic examination made. In addition a bacterial stain and culture can be made and a guinea pig inoculated for the determination of the presence of the tubercle bacillus.

The differential phenolphthalein functional test indicates in a general way the exact function of each kidney and determines whether or not the pathologic kidney may be removed if necessary. The time of the appearance of the dye after intravenous injection and its quantitative determination give valuable information as to the amount of destruction which has taken place in each kidney.

Uretero Pyelogram—By the injection of an opaque medium into the pelvis of the kidney one can learn of its size, shape and location; its proximity to a stone shadow as seen in stereoscopic films helps to identify the shadow as a renal or ureteral stone. The pelvis and ureter are usually dilated by chronic inflammation, ureteral obstruction, etc., and distorted by tumor masses. By over distention of the pelvis with the medium, pain will be elicited and its location and character often will determine whether the pain experienced during attacks is renal or extra renal.

The following case reports illustrate briefly a few of the more common types of cases encountered, and show the importance of an early diagnosis.

Chronic Unilateral Pyelitis

Female, age thirty-eight, P.H. negative. GU and GI tracts negative. The present illness began fourteen years before following the last pregnancy. Patient had at that time an acute attack of pain in the right lower quadrant of the abdomen with no urinary symptoms. Attacks have recurred once or twice yearly with more or less constant pain in the intervals. No urinary symptoms other than a mild nocturia and occasional burning urination. Five years ago she had her appendix removed without relief of symptoms.

Present attack began with pain in the right lower quadrant of the abdomen, vomiting, fever and frequent urination. On admission temperature was 100, pulse 80, respirations 20. Was tender over right lower quadrant, no rigidity, no mass. Catheterized specimen of urine contained albumen and a few pus cells and the stain showed numerous colon bacilli. X-ray findings were negative.

After the subsidence of acute symptoms the patient was cystoscoped, the right ureteral orifice was reddened and very sensitive, urine from the right side was cloudy. Differential phthalein test was 12 per cent in fifteen minutes from the right side, 8 c.c. of bromide was introduced, the patient experiencing the same type of pain as during the attacks. Pyelogram was normal. With one treatment by pelvic irrigation with 1 per cent silver nitrate, followed by urinary antiseptics, the pus and bacteria disappeared and she has been free from symptoms for three years.

Patients with chronic inflammation of the kidney pelvis and ureter should not be treated indefinitely by urinary antiseptics or bladder irrigations, as irreparable damage may result. Tumor, stricture, stone and other lesions should be excluded and the pelvis irrigated, one or more irrigations usually sufficing to clear up the infection.

Renal Stone

Male, age twenty-nine, past history negative. Present illness began six years before with lumbar backache, more severe after riding and exercise. Four years ago he had dull pain in the right lumbar region and occasional sharp pain radiating from the bladder to the kidney region, usually relieved by voiding. The urine at that time contained albumen.

One year ago after riding over a rough road the patient developed a hematuria, moderately severe and lasting for three days. He also had dull pain in the right lumbar region. Since that time he has had a mild hematuria every month or two and almost constant dull pain in the right kidney region.

No bladder symptoms, no chills or fever. Examination negative except slight tenderness on heavy percussion over right kidney. Urine alkaline contained a large amount of microscopic blood. X-ray showed three small stone shadows in the right kidney area, and the kidney shadow enlarged. Cystoscopy revealed a normal bladder and ureteral orifices. Ureteral catheters readily admitted, findings

on the left were normal, from the right 130 c.c. urine obtained in five minutes, was cloudy, red; a very faint trace of dye appeared in fifteen minutes. A pyelogram using 50 c.c. of bromide showed the pelvis greatly dilated and deformed.

The kidney was removed two weeks later and was found to be a large pyonephrotic sac with practically no normal kidney tissue. An early diagnosis in such a case with removal of the stones would mean the saving of the kidney and years of suffering for the patient. Pain with characteristic radiation to the bladder does not always occur with renal and ureteral stone.

Papilloma

Male, forty-five, past history negative. Four years before while at a ball game patient had a sudden, severe hematuria with no pain, lasting several hours. He then felt well and had no symptoms until two weeks before examination, when he developed a mild hematuria with colicky pain in the right side. Three days ago bleeding recurred. Had no other symptoms except a mild nocturia dating back two years: no loss of weight, no fever or chills.

Physical examination was negative. The urine contained a large amount of blood, no pus or bacteria. X-ray was negative for stone. Cystoscopy—the bladder contained a large papilloma posterior to the trigone, with each swirl of urine a small tumor mass projected from the left ureteral orifice, disappearing when the flow was over. A pyelogram showed the left pelvis dilated and deformed. The diagnosis confirmed at operation showed a left pelvic papilloma, malignant in nature, with secondary implantation in the bladder.

Profuse hematuria with or without pain is very suggestive of papilloma. Hematuria is a symptom which is usually of serious import and the mere fact that the bleeding subsides should not create a false feeling of security.

Pyonephrosis

Female, age sixty, small stature. Present complaint was backache and soreness in right side of abdomen. For six years she had had pain in the right side, for thirty years her right kidney had been floating. Four days ago the patient experienced a severe pain in the right iliac region radiating to the bladder, was feverish and vomited many times. No chills, passed no blood, urination was not urgent. No stomach or bowel symptoms.

Examination showed a large mass palpable in the right lateral abdominal quadrant and in the right lumbar region, was tender, firm and moved with respiration. Cystoscopy showed the bladder, left ureter and left kidney normal. The right ureteral orifice was small and closed, the catheter was admitted 5 cm. with difficulty and ten c.c. of cloudy urine drained. Differential functional test returned no dye in thirty minutes. A pyelogram using fifty c.c. of bromide showed the kidney pelvis dilated and deformed and below the normal position. No stones were visible in the films.

Ptosis of the kidney and kinking of the ureter with stasis and consequent infection was probably the pathogenesis in this case. Kidney fixation at an early date would probably have prevented the subsequent sequence of events.

Renal Tuberculosis

Female, age twelve. Family history, one sister died of pulmonary tuberculosis. Present history, patient was never strong, caught everything. P. I. For the past year the patient has had frequent urination day and night, with occasional burning sensation in the bladder. No hematuria, no pain. Has lost ten pounds during the year, now tires easily and has frequent night sweats. Had no lung, heart or abdominal symptoms. The afternoon temperature has ranged from 99° to 100°, pulse 120

Examination showed an under nourished girl, somewhat anemic, a lesion at the apex of the right lung with no apparent activity, and slight tenderness over the left kidney. A catheterized specimen of urine contained a few pus and red cells and an occasional bacillus resembling the tubercle bacillus. Cystoscopy of the bladder showed the left ureteral orifice reddened and surrounded by a lesion resembling a tubercle. The right kidney was normal as to function and the urine was normal. The urine from the left contained a few pus and red cells, the function was slightly reduced, and the pelvis was normal in the pyelogram. Guinea pig inoculation with urine from the left kidney was positive for the tubercle bacillus. The right was negative.

The kidney was later removed under novocaine and gas anesthesia and found to contain several tuberculous abscesses. The bladder was irrigated with silver nitrate. Three years later she had gained in weight and felt well.

Characteristic symptoms of renal tuberculosis are, age twenty to thirty, urinary frequency (day and night) in a young person, hematuria (present in 73 per cent of cases), loss of weight, fever, and pain as a late symptom. Renal tuberculosis is always secondary, delay in removing the infected kidney usually results in a bilateral involvement, particularly in children. An early diagnosis and proper treatment is therefore of extreme importance.

CONCLUSIONS

A brief paper such as this, of course, inadequately covers the field of urologic diagnosis. Its chief object is a plea for an earlier recognition of lesions of the urinary tract. The studies outlined for making such diagnosis are by their very nature time consuming, expensive and unpleasant to many patients. However, ineffectual treatment and chronic invalidism are infinitely more costly and disagreeable. The importance of early and accurate diagnosis is apparent and patients are quick to recognize that fact once the situation is explained to them.

FUNCTION OF THE GALL-BLADDER*

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I feel that there is no more timely subject for surgical discussion than the subject of the function of the gall-bladder. In discussions and in the literature, there is no agreement on the subject, many adhering to the old ideas and others accepting the newer conceptions.

It will be my purpose in this brief paper to review the experimental work that has been done, as well as the recent literature on the subject, and draw from them both some conclusions as to the physiological importance of the gall-bladder. This seems to be the "ablation" period of surgery and I wonder if we are not at times removing an organ that has a very definite function, and also a very positive recuperative power. Do not misunderstand me, for I am not saying that the gall-bladder should not be removed in any case, for I believe that there are very definite indications for its removal, and I follow that practice.

No discussion of the physiological function of the gall-bladder would be complete without a brief statement about its embryological development. The gall-bladder arises as a cul de sac from the same anlage that forms the liver and bile ducts, and it develops fairly early in embryonic history. It is well developed before the liver begins to function and it is also well developed before the urinary bladder and other organs that play a very important part in the vital functions of both high and lower forms of life.

I wish also to point out some of the more important anatomical facts concerning the gall-bladder. There are those that hold that it is a vestigial remnant and that it should be placed in the same category as the appendix. That it is not a vestigial remnant is clearly shown by the fact that it is a highly specialized organ in man, the highest form of life. Thus, among the higher animals, it is present—in the cow and sheep, while it is absent in the horse, present in the goat, and absent in the deer. Among the birds, the hawk and owl have a gall-bladder and the doves do not. Among the rodents, the mouse has a gall-bladder while the rat does not. Woods Hutchinson is responsible for the statement that in the giraffe, it is present at times and again not.

The anatomical facts that I wish to emphasize are, first, its intimate circulatory relation to the liver, through the cystic artery which is a branch of the hepatic artery, and its relation to the portal

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circulation. Second, its very intimate lymphatic relation to the liver. This second anatomical fact has been well emphasized by Harer and associates of the University of Pennsylvania in a recent article. They state "We have been impressed throughout the entire work with size and number of the lymphatics on the surface of the bladder, and equally so by the amount of flow observed after inserting capillary tubes into the lymph vessels leading from the gall-bladder." Because of this rich network of lymphatics, the gall-bladder has great absorptive power, a function that I will consider more at length later in this discussion.

Sudler is responsible for a very clear and comprehensive description of the structure of the gall-bladder. The gall-bladder wall in the human adult is $\frac{3}{4}$ millimeter in thickness when distended and 2 mm. when contracted. The wall is composed of four layers: (1) mucous; (2) fibromuscular; (3) subserous; (4) and on the exposed part covered by peritoneum or serous coat. The mucous layer is thrown into a series of folds which cover corresponding ridges of connective tissue of the fibro-muscular layer and contain an exceptionally rich capillary network. In the crypts formed by the folds there are solitary lymph follicles. The mucous layer is composed of simple columnar epithelium. The fibromuscular layer is composed of smooth muscle fibers and interlacing bands of connective tissue. It is in this layer that the thickest plexus of capillaries and intrinsic lymph channels exists. The surface of the gall-bladder is thickly covered with lymph vessels carrying lymph from the liver, but more from the layers of the gall-bladder itself. In the dog, these lymph vessels follow the inner side of the cystic duct and end in the lymph glands lying near the head of the pancreas. The lymphatic system of the human gall-bladder is not so simple as that in the dog, but essentially is the same.

So much for the embryological and anatomical considerations, let us now consider the physiology of the gall-bladder. Our text-books on physiology have very little to say upon the subject of the gall-bladder, many of them giving only a passing statement that it is a simple reservoir storing up the excess of bile. Many writers a few years ago, and especially Woods Hutchinson are responsible for the prevalent notion that the gall-bladder has no function—that it is a vestigial remnant and no harm could result from its removal. If it is only a vestigial remnant, no one has suggested of what it might be a remnant.

The work of recent investigators has clearly shown that this is not the case and that it has several definite functions. First, the gallbladder

acts as an equalizer of pressure between the liver and bile ducts. Clinical and experimental observation have shown that the removal of the gall-bladder is followed by a dilatation and thickening of the extra hepatic ducts. This dilatation is, according to Mann of Rochester, dependent on an intact sphincter at the end of the common duct, and that sooner or later, this sphincter gives way and a more or less continuous flow of bile goes into the duodenum.

Archibald has shown that the sphincter in the dog will withstand a pressure of 600 mm. of water. He was able to demonstrate conclusively that when the pressure in the gall-bladder rose to 600 mm. of water the sphincter relaxed and the contents of the bladder flowed into the duodenum, or as the pressure was reduced the sphincter closed the opening, and it remained closed until the pressure again rose to 600 mm.

F. C. Mann of Rochester has studied the tonicity of the sphincter in a series of animals, both with and without gall-bladders and found that the tone in those animals, having a gall-bladder was always over 75 to 100 mm. of water, while in those without a gall-bladder—withstood a pressure of less than 30 mm. of water.

Second, the gall-bladder is a reservoir for the partial storage of bile. The normal gall-bladder is always full of bile, because its relation to the cystic duct makes it a physical reservoir. During the periods of digestion, which total approximately ten hours a day, the bile is not stored but is secreted into the duodenum. During the remaining fourteen hours of the day, the bile is being stored. It has been found that the average secretion of bile is 30 cc. per hour, a total of 420 cc. of bile being secreted in the intervals between digestion, all of which by the power of the gall-bladder to extract fluids and inorganic salts, can be stored.

Third, the epithelium of the gall-bladder mucosa secretes mucus more abundantly in proportion to surface area than any other mucus secreting cells.

Fourth, the secretion of a hormone by the gall-bladder has been claimed by some. This hormone is supposed to stimulate the secretion of hydrochloric acid in the stomach during digestion, and in some so marked as to produce achylia gastrica. This has been disproven and probably does not occur.

We are all more or less familiar with the Metzler-Lyon method of so-called drainage of the gall-bladder, and the notion that we can say definitely where the A. B. and C. bile comes from Franklin D. White of Harvard has recently con-

tributed a very enlightening article on this subject. His work causes one to doubt seriously the conclusions of Lyon and Metzler. Much credit is due them for stimulating study of gall-bladder function, and I believe many definite facts will result, but I fear their method will soon fall into disrepute. I have had very limited experience with the method, but found it very interesting to observe, in the few cases in which I have employed the method, the A. B. C. sequence of bile flow from the Einhorn tube after the introduction of the 25 per cent magnesium sulphate solution.

Lyons theory is that the first pale yellow or "A" bile comes from the common duct, that the second darker, more viscid "B" bile comes from the gall-bladder, and the third, "C" bile comes freshly secreted from the liver. By clinical and bacteriological examination of the bile samples, he hoped to accurately diagnose the condition in different portions of the biliary system. Einhorn, however, does not believe that the dark bile necessarily comes from the gall-bladder, but is due to the effect of magnesium sulphate as a liver stimulant, increasing the flow of bile from the liver and driving it rapidly and directly into the duodenum. He found that stronger solutions of magnesium sulphate produced darker collections of bile. This to me would indicate that the liver has the power to secrete a concentrated bile and this may occur in those individuals that have had their gall-bladder removed.

Dunn and Connell of Omaha, have recently published an article which also throws grave doubt on the Metzler-Lyon method. They were fortunate enough to have a patient without a gall-bladder or common duct, in whom the hepatic duct had been anastomosed to the duodenum and who had also a duodenal fistula. Here was no sphincter to be relaxed and no bladder to be emptied. The typical "A," "B," "C" sequence of colored biles was obtained. The same results were obtained when the magnesium sulphate was injected into the duodenum, and also when the salt was taken by mouth. Their conclusion was that the color changes in the bile are due to a reaction of the liver to the presence of magnesium in the portal blood after absorption from the bowel, and this is in accord with Einhorn's results.

From my brief review of the literature on the subject in hand, I believe the concentrating power of the bladder is the most important. Rous and McMaster of Rockefeller Institute, by a series of very conclusive experiments have shown that the gall-bladder has the power to concentrate liver bile so that the normal healthy bladder will act

as a reservoir for all the bile secreted between digestion periods. They state, "The extent and rapidity of the concentration are alike remarkable. A gall-bladder emptied at the beginning of one experiment and left to fill from the liver, concentrated the 49.8 cc. of bile reaching it in twenty-two and one-half hours to 4.6 cc. reducing its bulk 10.8 times, while another bladder left distended with a bile of known constitution, and receiving in addition fresh increments from the liver concentrated the secretion 8.9 times in twenty-two hours. A series of five emptied bladders concentrated the bile coming to them in about twenty-four hours on the average of 7.1 times." The rapidity with which fluid is withdrawn through the wall of the gall-bladder may be judged from their experiments in which a bag was connected with the tip of the organ by a large cannula. Merely, in its passage through the bladder, the bile was concentrated two and one-half to four and eight-tenths times.

The bile ducts do not possess this concentrating power, on the contrary, they dilute the bile. This would lead us to the conclusion that the bile ducts cannot assume the function of the gall-bladder after it has been removed, even though they may dilate to a considerable extent.

McMaster attempted to determine whether or not animals that do not have a gall-bladder possess its functional equivalent in the ducts or in the liver itself. For these experiments, he used rats and mice. The former do not have a gall-bladder while the latter do. After ligating the common duct in rats, in no instance did he find that the ducts produced any concentration of the bile. On the other hand, the ducts tended to dilute the bile. In every case, there was marked dilatation of the ducts. It is an interesting fact that the bile of the rats, which undergoes no condensation of bulk after leaving the liver, contains on the average eight times as much pigment as does the liver bile of the mouse which is submitted to concentration. The bile delivered to the intestine, both in the rat and mouse are very similar.

The conclusion in McMaster's Experiments would be that the liver in the rat assumes the concentration function while in those animals having a gall-bladder, the concentrating function lies in that organ.

If we reason from this experimental work to the human biliary system, is it not reasonable to conclude that the concentrating function of the gall-bladder of those individuals who have had their gall-bladders destroyed by long continued infection and later removed for good and suffi-

cient reasons, is assumed by the liver, and that there is a slight compensation for the loss of the storage capacity by the dilatation of the ducts?

They make the perfectly obvious assertion that "There appears to be little general realization of the physiological uses of the healthy gall-bladder which has now become a surgical trophy." That the continuous flow of bile into the intestines is prevented by the sphincter action at the end of the common duct has clearly been shown by Archibald. We know that bile is secreted more or less continuously by the liver, so that of necessity there must be some storehouse for it between digestive periods. Assuming that function, we find the healthy gall-bladder placed into a rigid system of ducts, to minimize extremes of pressure when bile flows rapidly and in large quantities, and its escape into the intestine is prevented by the sphincter. The gall-bladder is rendered capable of storing large quantities of bile, not by its size but because of its concentrating power.

SUMMARY

The gall-bladder should not be placed in the same class as the appendix; it is not a vestigial remanent. It has a distinct function—that of bile storage by concentration and this function is essential to the proper functioning of the adjoining organs.

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lieve the New York Medical Journal and Medical Record will be one of the great Medical Journals of the world.

"SLEEPING SICKNESS"

"The U. S. Public Health Service has no statistics in regard to the prevalence of encephalitis lethargica, popularly known as sleeping sickness, that are sufficiently reliable and complete to warrant a statement as to the extent of the disease throughout the United States," says Surgeon General H. S. Cumming. "The disease is 'reportable' by physicians in comparatively few states; and in the larger part of the country the only data available are based on newspaper reports. Moreover, the disease is rather easy to confuse with some other diseases; and its prevalence is therefore likely to be unduly magnified. Thus, in an investigation made by Dr. H. F. Smith of the Public Health Service of the 1918-19 epidemic, 22 per cent of the supposed cases had to be excluded as being really cerebrospinal meningitis, cerebral syphilis, brain abscess, tuberculous meningitis, epilepsy, poliomyelitis, hysteria, or acute alcoholism.

"The disease appears to be only difficultly communicable. Not a single secondary case is known to have occurred in the immediate families of the patients reported in 1918-19, although some 900 persons were exposed.

"The fatality is rather high. Of the 159 cases studied by Smith death resulted in 46 or 29 per cent.

"It is interesting, though perhaps not significant, that the peak of the outbreak of 1918-19 was reached in New York City in January; in Virginia in February, and in Louisiana, Texas and Illinois in March. In California the largest number of cases reported in any one month was in April. Whether this progress was related to the season of the year or was merely a result of the spread of the disease is not known. Comparison with the present spread may throw some light on the subject.

"The disease is slow in development and long in duration. The period of convalescence is variable; in some cases recovery is completed within two weeks after the subsidence of the acute symptoms; but in others it is prolonged and leaves its record on the mind, on certain muscles, and on the nerves of the cranium. The mental troubles, however, usually pass off eventually.

"The appearance of encephalitis in epidemic form has, except for one epidemic reported from Austria, always been preceded by an epidemic of influenza. Forty-six per cent of the cases studied by Dr. Smith had had influenza and 54 per cent had not. The influenza attack rate has been ascribed to the lowering of the vitality of the patients by the influenza; but has also been explained as being really due to another attack of influenza which has invaded the central nervous system of the body. Whether or no there is any connection between the two diseases has not yet been established."

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IOWA STATE UNIVERSITY RECEIVES THE
\$450,000 APPROPRIATION

It will be gratifying to the medical profession that the Legislature of Iowa passed the bill appropriating \$450,000 a year for five years, thus assuring the generous gift offered by the Rockefeller Foundation and the Board of Education, \$4,500,000, will place our medical school in the front ranks of medical institutions. The medical school and hospital of the Iowa State University had already reached the high place, but what was sadly needed was building equipment, which now is provided.

It is gratifying to the profession of our state to realize that the people of Iowa are friendly to the medical profession, notwithstanding some apparent indications to the contrary. It has been our constant belief that public sympathy was with us and that any measure that promised benefit to the public and increased our ability to render service, and provide more accurate knowledge of disease, its causes and prevention, would engage public support. The State Board of Health under its present organization has appealed to the public in a way to aid materially in securing support of scientific medical activities. It must be accepted as a fact that the public, in the long run, are influenced by things accomplished rather than by things promised. The commercial phrase of "delivering the goods" applies as well to medicine as to trade, and when the public by a large majority decide that the goods are delivered, as shown by

granting a large sum of money in times like the present, we may be assured that the public have placed a measure on the things accomplished. The public are apparently determined to place their own estimate on methods of treatment, however irrational they may be, but when the complex, difficult and obscure causes of diseases come under consideration, then the public stand ready to rely on scientific methods of investigation. Assuming that this state of mind has grown out of observation, experience and education, we may be assured that an educational campaign by which scientific methods are translated into practical methods of treatment, will be extremely helpful.

The field recently occupied by "Health," a periodical under the auspices of the American Medical Association, and the activities of our recently appointed committee, will greatly facilitate this interpretation, but there must be a determined co-operation on the part of the profession, for as long as the public entertains the idea that all this is for selfish purposes and for the purpose of obtaining professional advantage and commercial gain, we may hope for little.

PANAMA CANAL ZONE

The first impression gained on visiting Panama Canal Zone is the order and cleanliness which prevail and the apparent efficiency with which the somewhat complicated government is carried on. It is a military state fifty miles long and ten miles wide, the primary function of which is to furnish a canal connecting the two great oceans and of contributing an important part to the plan of national defense. While commerce is of the first importance, the facility with which the Atlantic and Pacific fleets may co-operate by means of the canal in time of war, should not be overlooked.

Spain, more than 300 years ago, made a survey for a canal, but abandoned it on account of impossible expense. A hundred years later another attempt was made, but was opposed on the ground of expense and on account of the opposition of the church, which maintained that if it had been the will of God that the two oceans be joined, the narrow strip of land would not have been interposed. Nature certainly did not favor an easy construction of a canal. The tide on the Atlantic side is about eighteen inches and on the Pacific side eighteen to twenty feet, thus offering a serious obstacle to a sea level canal. Probably a more serious difficulty is the tendency of the ground to slide at Culebra Cut at what is known

as the Continental Divide. If the canal had been dug eighty-five feet deeper at this point, the original expense would have been immensely increased and the difficulty of keeping it open would be impossible to calculate, as it is now necessary to employ a large dredging force to keep the canal open, indeed, only a few days ago (about January first) 650,000 cubic yards of earth slid into the canal, but by the exercise of care did not interrupt traffic.

The canal is as it were lifted over the Continental Divide by system of locks to an elevation of eighty-five feet. The divide runs parallel to the long axis of the Isthmus, which follows such a line that the sun rises and sets in the Pacific Ocean. On the Atlantic side of the divide runs the valley of the Chagres River. On the Pacific side runs a valley but did not carry a river. A dam was built across the Chagres River, thus forming a lake of 166 square miles and about 85 feet above sea level. By a series of three locks the ships are locked into the lake (Gatun). After passing through the lake the ships are locked down one step at Pedro Meguil into another artificial lake (Miliflores) and then by two locks into the Pacific end of the canal and past Balboa docks into the ocean.

The Pacific side of the Isthmus is most accessible and the most interesting because of the numerous creeks, which become rivers at high tide, which rise from eighteen to twenty feet twice in twenty-four hours. The boats go up with the tide, unload or load, and return with the tide. There are no roads into the interior, therefore, whatever trade there is between Panama and the interior of the Republic, is by water and pack mule. The United States Government is making surveys into the interior, connecting the more important towns and making road beds and draining them, and the Panamanian Government is making appropriations for hard surfacing them, for nothing less than hard surface will hold them during the rainy season.

When we consider the Canal Zone we find a skeleton state under governmental control. The first and fundamental interest is the canal, involving many activities and employing many men. There is the civil administration and there is the army and navy activities separate, but co-ordinated by a military governor appointed by the president. There is a federal court presided over by a federal judge. There is a municipal court at the Atlantic and Pacific sides, and a sanitary court presided over by a physician.

The administration of the canal consists of a superintendent of maintenance really presided

over by the assistant to the governor, a civil engineer, a superintendent of locks and a chief hydrographic officer, who watches the rain fall and who watches carefully the rise and fall and the amount of water discharged into Gatun Lake by Chagres River—which is the main supply of water. His office is supplied with apparatus which keeps him constantly informed of the state of water in Chagres River, of the rate of wind, amount of evaporation from the Lake, the amount of water escaping through the spillway, the amount of water used by the locks and the water used for the hydro-electric plant. From all this data must be calculated the future supply for increased traffic through the locks. It has been calculated that the present supply of water would allow of fourteen lockages a day; when it exceeds that, additional provision must be made. It has now reached an average of twelve ships a day, bringing the government a revenue of \$1,000,000 a month or more.

The engineers have a plan of building a great dam across the Chagres River above Alahajinelle to hold back the excess of water during the rainy season, for use in the dry season.

All the men employed in the operation of the Canal are civilians and subject to civil jurisdiction; as far as possible the Canal employs Panamanians. The permanent men live in houses provided by the Government and rented at a nominal sum. They pay for fuel, electricity and cutting of lawns, although the Government agreed to furnish these free.

The Panama railroad, built in 1850, was acquired from the French as an incident to the purchase of the French rights and is therefore an adjunct to the Canal, but has a separate and independent organization; the governor of the Zone is president of the road, but the active operation is in the hands of a superintendent. The Panama railroad owns a line of steamships between Cristobal and New York and between Cristobal and Norfolk, which are also under the direction of the superintendent of Panama railroad. If the Canal needs work done at the railroad shops, the Canal pays the railroad as if it were an independent corporation. The railroad is as completely separate from all other Government activities as if it were owned by private individuals.

LIBRARY PHILADELPHIA COLLEGE OF PHYSICIANS

The library committee of the College of Physicians issued a report for 1922. At this time the library contains 136,489 volumes; 14,677 theses and 131,866 unbound pamphlets.

THE PASSING OF GREAT MEN IN THE PRACTICE OF MEDICINE

We may date the beginning of modern teaching of scientific medicine in the United States with the organization of the Johns Hopkins Medical School. There was a growing spirit of modern teaching but until the foundation of Johns Hopkins there had never been funds for the purpose. When Wm. H. Welch returned to New York in 1878 after his long training in the hospitals and laboratories in Germany, he found no laboratories in the New York Medical Schools or Hospitals. He was appointed lecturer in pathology to the College of Physicians and Surgeons but there was no laboratory. This did not meet with Dr. Welch's views. The newly organized Bellevue Hospital Medical School offered in addition to a lectureship two small rooms over a hallway and an additional room which he could turn into a laboratory. This seemed but a small way to begin pathology after years of work and study in the fine laboratories of Europe. In 1885 Welch was made professor of pathology at Johns Hopkins Hospital but it was not until 1888 and 1889 that the medical school was organized and the faculty appointed. Of Halstead, Osler and Kelly, the first three great teachers selected by Dr. Welch, Kelly only remains. Dr. W. S. Halstead was born in New York September 25, 1852 and died in Baltimore September 7, 1922 in his seventieth year. He was a graduate of Yale, 1874, and the college of physicians and surgeons, Columbia, 1877. Honorary F. R. C. S. England, 1900, and from Edinburg in 1905. He was connected with several hospitals in New York until 1889 when made professor of surgery, and surgeon-in-chief of Johns Hopkins Hospital. Welch, Halstead, Osler and Kelly are names that will always be associated with scientific medicine in America.

IOWA STATE UNIVERSITY NEWS NOTES

Dr. Don M. Griswold

Dr. L. W. Dean, dean of the college of medicine, S. U. I. delivered an address before the laryngological section of the New York Academy of Medicine in New York City and also an address before the eastern section of the American Laryngological, Rhinological and Otological Society in Providence, Rhode Island, this past month, March.

Dr. Arthur J. Lomas, superintendent of the State University Hospital at Iowa City has recently been elected director of the University Hospital of Maryland University at Baltimore. The doctor has tendered his resignation as director of the S. U. I. Hos-

pital, which resignation becomes effective May 1, 1923. His successor has, as yet, not been announced. Dr. Lomas has been at the head of the hospital of the State University since August, 1921. The Doctor will return to his old home city where he was formerly associated with the Johns Hopkins Hospital as assistant director.

Dr. Bundy Allen has recently been elected president at a meeting of the Iowa City Shrine Club.

A new feature will be introduced into training courses for nurses at the University of Iowa, during this year, at the summer session. Such has been announced by Miss Josephine Creelman, superintendent of nurses. It will be a special course for graduate nurses in executive institutional positions. Miss Mary C. Wheeler, registered nurse at the Illinois Training School, Chicago, will be director of the course which will be given from July 7 to July 20, 1923.

Miss Beulah Crawford, Miss Lola Lindsey of the University School of Nursing and faculty members of the various colleges of medicine, chemistry, etc., will appear as special lecturer on the staff. Among the subjects to be offered are General Psychology for Nurses Training, School Administration, Teaching Nursing Principles. The facilities of the College of Medicine and the State University Hospital will be placed at the disposal of the students.

Internships, 1922-1923

The senior medical students of the State University of Iowa of class '23, have received the following appointments in the various hospitals:

S. U. I. Pediatrics—W. A. Annebury, Carroll; R. H. McBride, Alden.

Medicine—C. D. Awe, Iowa Falls; R. I. Crary, Ute; L. C. Elledge, Cincinnati, Iowa; B. C. Farrand, Spencer; H. P. Moen, Inwood.

Eye, Ear, Nose and Throat—H. A. Bender, Le Mars; R. D. Proctor, Cedar Rapids.

S. U. I. Psychopathic—R. D. Jolly, E. S. Rademacher.

Surgery—F. J. Cornelius, Marion; L. A. Miller, South English; C. A. Samuelson, Iowa City.

Gynecology and Obstetrics—J. J. Hummel, Webster City.

Iowa Methodist Hospital, Des Moines—E. W. Anderson; C. A. Sones; W. W. Bond.

Lutheran Hospital, Des Moines—B. S. Berry, I. W. Young.

Maryland General, Baltimore, Maryland—A. E. Cardle.

Harper Hospital, Detroit, Michigan—A. E. Ady, W. G. Bernard, T. P. Treynor.

St. Anthony, Oklahoma City—G. L. Berry, G. I. Nelson.

Butterworth, Grand Rapids, Michigan—A. J. Cone. Miller Hospital, St. Paul, Michigan—K. W. Diddy, D. M. Gallaher, E. V. Kenefick.

Los Angeles Count Hospital—C. R. Johnson.
Jennie Edmonds, Council Bluffs—B. E. McDowell,
I. R. Powers.

St. Francis, LaCrosse, Michigan—I. O. Eiel, V. J. Horton.

St. Mark, Salt Lake City, Utah—R. H. Kampmeier,
L. D. Mahannah.

City Hospital, Seattle, C. J. Smith.

Other appointments in the various departments of
S. U. I. are:

Eye, Ear, Nose and Throat—Dr. Oral Thornburn,
Iowa City; Dr. D. B. Sharp, Iowa City.

Gynecology and Obstetrics—Dr. Hark, Iowa City.

Surgery—Dr. Frank Valequette, Sioux City; Dr.
Frank Peterson, Iowa City; Dr. E. C. Yoder, Iowa
City.

Pediatrics—Dr. B. L. Robinson, Iowa City.

SALT LAKE COUNTY MEDICAL SOCIETY, UTAH, INVITATION

The Salt Lake County Medical Society is arranging for the entertainment of visitors who may be able to stop over enroute, either going to or coming from the meeting at San Francisco. The stopover here can be made inexpensive. Our society has already appointed committees to greet and assist in making arrangements to see the city and, if possible, some of the surrounding territory, which may include wonderful mountain drives; a visit to Saltair, which is situated on Great Salt Lake; and a visit to the great copper mines in this vicinity.

Large parties intending to make this stopover are requested to give us notice as far in advance as possible as to the number in party and length of time of stopover. Any inquiries relative to this matter may be directed to Secretary Dr. Floyd F. Hatch, Deseret Bank Building, Salt Lake City, Utah.

FORTIETH ANNIVERSARY

The Christian Home Orphanage, Council Bluffs, Iowa, will have rounded out forty years of service in behalf of orphan and destitute children on March 16. This great institution, known in all parts of the country, has been built up and maintained wholly by the voluntary contributions of the people. It has no other means of support. It cares for a daily average of more than two hundred children, received from all parts of the country, and also conducts a hospital department, a department for aged, dependent women, and a department for the crippled and deformed. At present a most serious epidemic of flu has stricken the Home, more than one hundred being sick, many of them seriously. Funds are badly needed to help meet the expense of this onslaught, and to help keep the work from debt. It is hoped that a Fortieth Anniversary offering to this work will relieve a pressing situation which, if long continued, will work serious injury to the Orphanage.

Send something to help these little ones. Address
The Christian Home Orphanage, Council Bluffs,
Iowa.

PENNSYLVANIA MEDICAL JOURNAL

The Pennsylvania Medical Journal announces that with the April number there will be a consolidation of the Pennsylvania Medical Journal (the official journal of the Pennsylvania State Medical Society) and the Delaware State Medical Journal, under the name of Atlantic Medical Journal, serving as the official journal of these two states.

SOCIETY PROCEEDINGS

Boone County Medical Society

A meeting of the Boone County Medical Society was held March 8 at the Chamber of Commerce rooms with the president, Dr. R. S. Shane of Pilot Mound in the chair.

Dr. Shane introduced Dr. James E. Russell of Fort Dodge, who read a paper on Obscure Fevers from Childhood, which was most instructive.

Polk County Medical Society

The Polk County Medical Society met in the Library, Chamber of Commerce, March 27, 1923, in regular session at 7:30 p. m. Dr. Charles Ryan, president, in the chair. Dr. H. E. Rawson, secretary. An important program was presented.

Dr. E. B. Winnett presented a Report of a Patient with Diabetic Coma, Treated with Insulin. A careful analytic study of the case was made, a minute statement of the condition at brief intervals, the dose of insulin administered, the size and frequency of dose, the immediate effects, the increase, the response, the means of counteracting the effects of the insulin and final results, all recorded in minute detail and in a way to impress the society with the thought that only by enthusiastic faith can the remedy be used with success, certainly not by the usual therapeutic methods. The impression to be gained was that no one without expert skill and faith should undertake the treatment of diabetes with insulin. This report was supplemented by analysis of two other cases. (We hope soon to publish this important communication.)

Dr. Henry H. Dilley read a paper on Duodenal Lavage in Billiary Disease, reciting a number of personal cases. Reviewing the literature on the subject and making important observations on the class of cases in which duodenal lavage should be employed.

Considerable work has been done in this method of treatment. It was the purpose of Dr. Dilley to aid in fixing the method of application and the class of cases in which it could be employed.

Dr. Geo. McCraight read a paper on Plumbism, based on twenty-five cases of his own. These cases were classified as to symptoms and analyzed as to

treatment. Particular stress was placed on diagnosis and he expressed a belief that cases of lead-poisoning were more common than is generally believed, and one should have in mind the possibility of lead poisoning when certain rather obscure symptoms appeared.

Dr. Rodeny P. Fagan read an important paper on Present Status of Public Health in the Legislature. After reviewing some of the work accomplished by boards of health, and the importance of legislative generosity in providing money to further the work of the guardians of public health, Dr. Fagan proceeded to lay before the society the work the Iowa State Board was doing in the way of improving the health and sanitary conditions of the state. There was a clear showing of marked progress and a growing sympathy on the part of the profession and the public in health matters.

The doctor took occasion to criticize the Journal of the Iowa State Medical Society by calling attention to an editorial relating to the discussion going on in important medical circles as to present views on tuberculosis.

The papers of the evening were generally discussed. The program for the April meeting was announced.

Tri-State Medical Association

The following are the officers, board of trustees and committee on medical research and advancement for the Tri-State Medical Association:

President of clinics, Dr. William J. Mayo, Rochester, Minnesota.

Honorary president, Dr. James R. Guthrie, Dubuque, Iowa.

President, Dr. Horace M. Brown, Milwaukee, Wisconsin.

President-elect, Dr. Clifford U. Collins, Peoria, Illinois.

Vice-president, Wisconsin, Dr. Joseph S. Evans, Madison, Wisconsin.

Vice-president, Illinois, Dr. Edwin P. Sloan, Bloomington, Illinois.

Vice-president, Iowa, Dr. Frank M. Fuller, Keokuk.

Managing director, Dr. William B. Peck, Freeport, Illinois.

Temporary associate managing director, Dr. J. Sheldon Clark, Freeport, Illinois.

Temporary secretary, Dr. Edwin Henes, Jr., Milwaukee, Wisconsin.

Temporary treasurer, Dr. Henry G. Langworthy, Dubuque, Iowa.

Board of Trustees

Dr. John Van Reed Lyman, Eau Claire, Wisconsin.

Dr. Wilson Cunningham, Platteville, Wisconsin.

Dr. Arthur G. Sullivan, Madison, Wisconsin.

Dr. Donald McCrae, Council Bluffs, Iowa.

Dr. John F. Herrick, Ottumwa, Iowa.

Dr. Henry G. Langworthy, Dubuque, Iowa.

Dr. Edward W. Fiegenbaum, Edwardsville, Illinois.

Dr. Charles G. Farnum, Peoria, Illinois.

Dr. Edward S. Murphy, Dixon, Illinois.

Medical Research

Dr. Frank Billings, Chicago, Illinois.

Dr. George W. Crile, Cleveland, Ohio.

Dr. Campbell P. Howard, Iowa City, Iowa.

Dr. Dean Lewis, member and secretary, Chicago, Illinois.

Dr. Charles H. Mayo, Rochester, Minnesota.

Dr. John L. Yates, Milwaukee, Wisconsin.

Chairman Foundation Fund, Dr. Henry G. Langworthy, Dubuque, Iowa.

Panama Medical Society

The Panama Medical Society met at Ancon Hospital, Tuesday evening, January 10, 1923. Major Bock of Santa Tomas Hospital, Panama City, president, in the chair.

The principal address was by Dr. W. A. Evans of Chicago. Dr. Evans devoted an hour to the discussion of sanitation and preventive medicine. After some general observations on the accomplishments of preventive medicine and the hope for the future, he took up as the principle subject for discussion, Pneumonia. Referring to health conditions in Chicago for the past fifty years, he showed that the ordinary diseases of the summer months had been reduced in the last few years to one-third of the death rate of fifty years ago, while on the contrary, the death rate from diseases of the winter months had remained stationary or had increased, referring particularly to diseases of the respiratory tract. Beyond the knowledge gained as to the bacteriologic origin of pneumonia, there had been no improvement in our understanding of the epidemiology or treatment of the disease.

Dr. Evans urged a closer study of the fundamental facts in the epidemiology. Disclaiming any particular knowledge of the treatment of pneumonia, he held that our hope for the future rested on prevention, and on the possible discovery of a vaccine that would establish an immunity. He referred to an antitoxine and drew attention to quinine in some dosage that would serve that purpose without a dangerous toxic effect on the patient, but so far, the results have not been satisfactory. The inference to be drawn from Dr. Evans' discussion was, that the particular reason for the prevalence of pneumonia in the northern and middle states could be found in segregating of people in limited space on account of inclement weather.

The paper was discussed by Col. Fisher, Chief Sanitary Officer of the Zone, Col. Hess, Superintendent of Ancon Hospital, Col. Fairchild, Chief Surgeon of Mobile Troops, and others connected with the medical service. Col. Hess showed that but few cases of pneumonia occurred in Ancon Hospital and attributed this fact to the tropical climate, the abundant space in the large wards, which were always open

to free circulation of fresh air, as the doors and windows were always wide open.

Col. Fairchild, as chief surgeon of an active division in the field in France, observed that soldiers in the field in France exposed to all the hardships of an active campaign, rarely suffered from pneumonia, while, when in barracks, developed the disease and called attention to the fact that when his division was employed as a part of the army of occupation in Germany and lived in close quarters, the disease prevailed to a considerable extent and also at the different posts on the Zone when the troops were confined in quarters having less than ten square feet of floor space, pneumonia began to appear, and that when the space was increased to ten square feet or more for each man sleeping head to feet, the disease began to disappear.

It appeared from the discussion of the Panamanian and Zone doctors that the conditions existing on the Zone largely met the requirements stated by Dr. Evans.

The Panama Medical Society has about forty members and appears to be an active body of medical men who meet and discuss the problems of the army medical service, and Zone conditions.

MEDICAL NEWS NOTES

Complete club and assembly rooms for the doctors and dentists who will occupy the new Physicians' and Dentists' eight-story steel and concrete building at Third and Washington streets, Burlington, is part of the comprehensive plan to make this building especially adapted for the use of its professional tenants.

The company is capitalized at \$250,000 and \$100,000 bonds have been sold. The stock issue of \$150,000 has been nearly all sold and only a small block is yet on the market. A great deal of the stock has been taken by the more than twenty doctors and dentists interested in the enterprise.

Dr. George E. Vincent, president of the Rockefeller Foundation, speaking to a medical association in St. Louis said he hoped to live to see the day when "we will be paying doctors as we now pay lawyers—a retainer fee by the year to prevent sickness in the family."

Much progress has been made along this line in recent years. Preventive medicine has been stressed more and more. And the research work by institutions and scientists supported by the Rockefeller Foundation has contributed more towards the prevention of disease than all the work of the previous half century.

It is the hope of all those interested in the new \$5,000,000 medical college at the State University of Iowa that if the legislature will accept the generous gift which has been offered, Iowa will take the lead in this research and preventive work. She has the men and already they have done much. With the

proper equipment and facilities they and their students can do infinitely more.

If it all works out as planned, the time may not be far distant when we shall pay doctors on a different basis. As Dr. Vincent says: "They will visit the home at certain intervals, and by examinations will prevent, instead of cure disease."—Cedar Rapids Republican.

The proposed gift of \$2,500,000 to the state of Iowa by the Rockefeller Foundation looks like a mighty good thing. It is to go for hospital and medical school purposes, but in order to be made available must be matched by five annual appropriations of \$450,000 each by the state.

Iowa, by reason of some commendably constructive legislation, has been able through the agency of the medical school at the State University, to carry out a real "brother of man" policy. Health, strength and happiness are being brought to many a child and adult who otherwise would have been forced to go through life seriously handicapped. The gift of the Rockefeller Foundation will enable the good citizens of the great commonwealth of Iowa to put into practice still more effectively the Golden Rule.—Cedar Rapids Enterprise.

PERSONAL MENTION

Dr. Linwood G. Gardner, Class 1920, State University College of Medicine, has located in Hawarden, Iowa.

Dr. Fred C. Bendixen, a graduate of the State University College of Medicine, has located in Ireton, assuming the practice of Dr. F. F. Wall, recently locating in Hawarden.

Dr. S. Savage has located in New Sharon and has entered into partnership with Dr. Hartwell.

Dr. H. I. McPherrin has located in Des Moines and will devote himself to diseases of the eye, ear, nose and throat.

Dr. Thomas F. Duhigg, naval physician, for some years stationed in Des Moines, is now cruising in Philippine waters and writes from Cavite, P. I., of his trip since he left last September. Dr. Duhigg sailed from San Francisco to Manila via Guam and the Hawaiian Islands. He spent a recent vacation in the Malay Straits Settlement and Java, and is soon to start on a cruise through Japanese and Chinese waters which will carry him up the Yangste River to Hankow.

Dr. Carl C. Bickley of Waterloo has returned from Edinburgh, Scotland, where he has been attending the University of Edinburgh two months, taking post-graduate work in obstetrics. He returned because of the illness of Mrs. Bickley.

Dr. R. Fitz, professor of medicine in the Mayo Foundation and chief of a medical section since 1920, has been appointed associate professor of medicine at Harvard University and visiting physician at Peter Bent Brigham Hospital, Boston.

THE SAN FRANCISCO SESSION

For the American Medical Association meeting at San Francisco the Santa Fe will operate a special train for members and their families, their announcement appearing in this issue. This train will leave Kansas City over the Santa Fe June 17, cars will leave Des Moines over the Chicago Great Western Railway, evening of June 16th, and will be handled through on this special. Details can be obtained from C. A. Moore, general agent of the Santa Fe 615 Flynn building, Des Moines, Iowa.

(See advertising page v)

OBITUARY

Dr. William W. Hunter, formerly of Iowa City and later of Monticello and Anamosa, Iowa, died in Anamosa January 8, 1923, where he practiced seven years. He had practiced medicine in Monticello more than a quarter of a century, but had been in frail health during the past two years, and really returned home to await the end.

He was sixty-four years of age, last July. He was a native of Jones county, Iowa, and was a son of Cyprian Hunter, who was killed on the battlefield, during the Civil War.

Dr. Hunter came to Iowa City nearly forty years ago, and was graduated from the Iowa University College of Medicine in 1886. Afterwards he practiced at Center Junction, Monticello and Anamosa. Before his graduation, he was an interne in Mercy Hospital, Davenport.

Dr. F. E. Seymour of Fort Dodge died at his winter home at Long Beach, California, January 14, 1923.

Dr. Seymour had been prominent in professional and business affairs in Fort Dodge for many years. Dr. Seymour was seventy-two years of age and had practiced medicine in Fort Dodge forty years. He was born in Westmoreland, Oneida county, New York, and came to Iowa in 1859. Graduated from the medical department of the Iowa State University and located in practice in Fort Dodge immediately after graduation.

For many years Dr. Seymour was known as a leading physician among a group of strong men who located in Fort Dodge.

Dr. Agnes Eichelberg, formerly of Sioux City, who died at Los Angeles recently, distributed an estate of \$50,000 to charitable purposes. Several hospitals and maternity institutions were beneficiaries.

Dr. John Edward North died suddenly at his home in Rock Rapids, March 8.

He was a graduate from Hahnemann Medical College, Chicago, in 1895, and had practiced twenty-eight

years in Rock Rapids and was at the time of his death fifty-four years of age.

An Appreciation

Dr. Jay M. Crowley

The Angel of Death has again invaded the circle of our friends, coming when we least looked for it, gently stealing away our beloved brother, who was a leader in the civic life of our village and a marked and distinguished character in the medical profession of our home community.

John Edward North was born on the 17th day of February, 1869 at Madison, Wisconsin. In early life he exhibited a real liking for the professional world and by applying himself diligently he graduated from the Hahnemann Medical College at Chicago in 1895, and during the same year began his useful and successful career at Rock Rapids, Iowa, as one of the leading practicing physicians.

For twenty-nine years he served his community and his friends faithfully and well. He had the confidence of the community folk as well as the esteem and friendship of the medical profession and his co-workers. He was a friend to mankind and a generous contributor of his own energy in times of medical emergency and community welfare needs.

He was born with a gentle disposition, reared in the sunlight of a godfearing home and grew into manhood and the professional world with a love for his fellow-men. He was congenial and affable and his kindly disposition made friends that were lasting and true.

His life of public service to his home town in the many years as a member of the board of education, member of the city council, member of the board of park commissioners and member of the board of library trustees, reminds us in the passing of our brother that we have lost one of our noblest and useful citizens.

We have all lived in this community with him and have felt his moulding influence for good and the inspiration of his cheerful personality.

It is almost impossible to fittingly comment on the life, labors, accomplishments and preeminent positions held by our brother and friend in Masonry and civic life as well as in the hearts of those who knew him.

For many years his personal history has been that of the making of a better and a greater home surrounding and his thoughts and deeds are interwoven in the records of our community progress.

His individual mark is indelibly impressed upon our educational work, our city growth, our public library, our children's park beautiful, our charities, as well as many other laudable undertakings. He has ever honored our Masonry and our various avenues of progress as we have sought to honor him.

Few men will ever command more love and respect than was accorded to him and few possess a more

wide reaching and beneficial influence. His personal character seemed an embodiment of the principles of right teaching and right living.

His benevolent disposition afforded a courteous hearing to every one in whatever cause, tempering his justice with strong convictions of right and wrong.

The best years of his life were devoted to the healing of the sick and the welfare of others. He was a guide and genius in his profession, to which he was whole heartedly devoted, and a real counselor and friend to an ever increasing host of younger men and women.

Dr. George Harwood, age seventy-eight, died at Finley Hospital, Dubuque, Saturday, March 24, 1923, after an illness of four years.

He was born May 5, 1844, in Macclesfield, England, where he resided until the age of fifteen when he enlisted in the English Army and went to India for service. He took part in the East Indian mutinies. He was stationed in India for about seven years and while there he received special officer training and instructions in surgery and medicine at Bombay.

He received the rank of bombardier of the 18th Brigade of Royal Artillery and during an engagement received wounds, which forced his retirement from service. Because of having won fame as a gunner he was given the honor of firing the national salute for the Prince of Wales, now the King of England.

On retiring from the army Dr. Harwood attended the royal infirmary at Macclesfield for seven years and for nine months was stationed at Chalton Hospital as a surgeon. Later he was appointed superintendent at the Ashton-under-Lynne Hospital at Staley Bridge, England. After two years as superintendent of this hospital he took charge of Birkenhead Hospital.

In October, 1873, he came to America settling in Canada, where he did hospital and railroad medical work. He then came to Masonville, Iowa, where he practiced medicine for twenty-one years. In 1895 he moved to Epworth, Iowa, and entered the drug business, which he operated until 1916, when he retired. In 1921 he moved to Dubuque.

Dr. W. A. Quigley of Hawarden died November 11, 1922, at the age of sixty-five years. Dr. Quigley was born in Andrews, Iowa, October 11, 1867. During his youth he lived with Dr. A. S. Carnahan of Andrews. Dr. Quigley graduated from Rush Medical College in the class of 1880. On July 19, 1882, he married Miss Margaret Allen of Jackson county and located in Calliope the same year and later moving to Hawarden. He was at one time editor of the Hawarden Chronicle.

Dr. J. E. King, who, had he lived until June 9, would have been ninety-eight years old, died at his home, Eldora, January 23, 1923. He had lived in the same home for more than fifty years. He was

born in Mahoning county, Ohio, in 1825, and came to Eldora in 1863. When a young man he made a trip to California, walking most of the distance, and later journeyed to South America where he remained three years.

Dr. King held many positions of trust and honor in this community, and was one of the oldest members of the Masonic fraternity in the state. He is survived by the widow and three sons. The sons are Jay King of Des Moines; O. J. King of Eldora and J. E. King of St. Paul.

Dr. E. J. Shelton was born and reared on a farm in Decatur county, Indiana, and on October 20, 1922, he was ninety-one years old. He received his early training in the country schools and began the study of medicine in 1849. He was graduated from the Ohio Medical College at Cincinnati, Ohio, in 1856; from the Keokuk Medical College in 1864; from the Bellevue Hospital Medical College, New York, in 1874.

Dr. Shelton died February 18, 1923, at his home in Bloomfield.

Dr. John I. Hostetter of Colo, Story county, died Friday, February 16, 1923. He had practiced medicine in Colo for more than thirty years. He was born at Mount Carroll, Illinois, sixty-five years ago and came to Story county immediately after graduating from medical college.

Dr. Hostetter's death was caused by paralysis. He is survived by his sister, Mrs. D. H. Reichard, by a daughter, Mrs. Truman Manning, and a son, Hugh Hostetter, both of Colo. Six grandchildren also survive him.

Dr. J. W. Huffman was born near Staunton, Virginia, July 1, 1850, and departed this life at his home in Prescott, Iowa, January 15, 1923, aged seventy-three years, six months and fourteen days. His mother died when he was but two years old and he was reared to young manhood in the home of his grandparents. He was a student in the State University of Virginia, at Charlottesville. When the Civil War broke out the university suspended for a while. At the age of nineteen he came north to Ohio, and later to Eureka, Illinois, where he was principal of the schools and read medicine with a prominent physician. At this place he met Miss Ella M. Myers, who was also a teacher in the schools, and to whom he was married April 2, 1882. He later graduated from Ohio Medical College in Cincinnati. He began his practice of medicine in Roanoke, Illinois, and afterward he and his wife moved to northern Iowa and in May, 1891, came to Prescott, which has since been their home.

Dr. Eichelberger came to Sioux City in December, 1889, and a short time later began the practice of medicine.

Taking a great interest in the various charitable institutions, Dr. Eichelberger later established the

Women's and Babies Home. The home joined the Florence Crittenton chain about twenty years ago.

On June 1, 1914, she founded the Maternity Hospital, and since had been actively associated with the institution.

Born in Lewiston, Illinois, May 28, 1864, she was fifty-eight years old at the time of her death. Laying a foundation for the medical profession in the public schools of Lewiston, she entered the Women's Medical School at Chicago.

A short time after her graduation she came to Sioux City and had since continued to reside here.

Dr. Eichelberger was a very active welfare worker and was a leader in the better babies movement.

A brother, Edwin Eichelberger of Los Angeles and a sister, Mrs. Julia Dyckes of Lewiston, Illinois, survive.

Dr. J. S. Farrell, one of the pioneer citizens of Barnes City, died at his home Tuesday morning of last week. He had been suffering from heart trouble for several years which finally resulted in his death. He had been practicing medicine in Barnes City and vicinity the past twenty years.

Dr. Cavanagh was born near Ottawa, Canada, November 2, 1885, and spent his early years on the farm. Having showed a great aptitude for books and study, his father sent him to the University of Ottawa, where he received his classical training and was graduated with the degree of B. A. Then he entered the medical department of the University of Michigan, and after receiving his medical degree came to Dunlap.

Dr. Samuel J. Smith died early Thursday morning at his home 430 Oakland avenue, Saturday afternoon at 2 o'clock January 18, 1923.

Dr. Smith was sixty-four years old. He was born near Kalona and had lived in Johnson county all of his life. In 1885 he graduated from the S. U. I. College of Medicine and began practicing shortly after that at Wellman where he stayed until he came to Iowa City in 1905.

One of Des Moines' pioneer women, Mrs. R. U. Chapman, eighty-six years old, died at her home, 1110 Twenty-fifth street, Friday evening at eleven o'clock. Mrs. Chapman had been ill for three and a half years.

She was born in Coshocton, Ohio, on February 18, 1837 and came to Des Moines with her husband, Dr. R. U. Chapman in 1891. For thirty-two years they had lived in the same house.

Mrs. Chapman was the mother of six children, Will Chapman, who died five years ago, Dr. C. McG. Chapman and Miss Flo Chapman of Des Moines, E. P. Chapman of Prescott, Dr. R. R. Chapman, Bridgewater and Mrs. Eritt Alexander of Milwaukee. Her one remaining sister died in Coshocton a week ago. She has eight grandchildren.

Dr. Wallace M. Brackett, aged seventy-six passed away in his rooms in the Martin Hotel, Sioux City, Thursday evening, January 11, at 10:30 o'clock, after a lingering illness from uremic poisoning.

Dr. Brackett was born in New York state May 5, 1846. He continued to make his home there until his graduation from the college of medicine of Northwestern University, Evanston, Illinois, in 1876. He practiced medicine in Chicago and later in Humboldt, where he was wedded. Later he practiced at Livermore for many years and there he and Mr. Davison became friends. While there he served as mayor for several years. Later he moved to Garner, where he continued in practice for a quarter of a century, and where he and the H. E. McBride family became friends. His wife died eight years ago at Biloxi, Mississippi, where he had taken her for her health. They had no children. He came to this city in 1920 and since had lived here, making his home with the McBride family for several months and for the last two years he had lived at the Martin Hotel. Before he was taken with his final illness he had planned to go to Albuquerque, New Mexico, to make his home with a nephew, Prof. J. R. McCollum, principal of the schools in that city. He was a veteran of the Civil War.

Dr. William R. Owen, aged seventy-eight years, died in Los Angeles, January 15, after an illness of several years, and was buried at Whittier January 17. Funeral services were conducted by the pastor of the Whittier Friends Church, assisted by Dr. A. Rosenberger, former president of Penn College. This news story will be of interest to many of the old timers of Hardin county, Iowa, for in his young manhood Will Owen lived near Iowa Falls. He was married in 1865 in Marshalltown to Miss Martha Andrews. Later the family moved to Pueblo, Colorado, where Dr. Owen attained success in his profession, serving for two terms as a member of the Colorado state medical board. Failing health caused him to give up his work a score of years ago. He is survived by his widow, a son, Attorney James Owen, of Denver, and a daughter who resides in New York, but is now in Europe. He was the son of James Owen, a prominent Friends minister in the early days of Iowa Yearly Meeting, cotemporary with Lindley M. Hoag of Iowa Falls. The James Owen home was in the western edge of the little town of New Providence.

Dr. Samuel E. Nixon of Burlington, Iowa, a graduate of the Chicago Homeopathic Medical College, died at his home in Burlington, February 10, 1923.

Dr. Nixon was born in Guyandotte, West Virginia, August 9, 1849. He came to Burlington in 1875.

Griffy Benjamin Ward, son of Dr. A. B. and Mariah Jane Ward, was born at Center Point, February 26, 1856, and died in his home in Fairbank at about 2:20 o'clock Saturday morning, January 27, 1923.

Dr. John E. Gilmore was born in Uniontown, Fayette county, Pennsylvania, September 12, 1839, and died at his home in Baldwin, Iowa, February 24, 1923.

He was a veteran of the Civil War, enlisting in company A, 26th Regiment, Iowa Infantry Volunteers on July 7, 1862. He served three years and was honorably discharged from the service of the U. S., June 6, 1865, at Washington, D. C., at the expiration of service. During the war he was a prisoner for seven months at Danville, Virginia, and other prisons where he suffered untold agonies, which impaired his health for life.

During the war Dr. Gilmore was assistant surgeon and was taken prisoner while on the line of duty, having charge of a medicine wagon and ambulance filled with sick and wounded on their way to headquarters.

Dr. Gilmore entered Keokuk Medical School following his discharge and was graduated in 1867.

Dr. A. S. Hague died March 11, 1923. Dr. Albert Smiley Hague was born in Libertyville, June 29, 1872, the son of Albert Gallatin and Harriet Smiley Hague. He attended the public schools and then went to the Keokuk Medical College for his professional training, graduating there in 1897. He immediately went to Grand Ridge, Illinois, where he practiced for two years, coming to Fairfield, January 1, 1900 and opening an office.

He was successful in his practice and became a recognized leader in his profession. At the time of his death he was city health officer.

Dr. Thomas Griffin O'Connor was born in Chicago, September 16, 1871 and died at Imogene, Iowa, March 6, 1923. At the age of ten years he moved with his parents to Ringgold county, Iowa, where his father still resides.

After finishing at the local schools he attended St. Mary's college, St. Mary's, Kansas, and received his degree in medicine at Rush Medical College, Chicago, in 1896. Locating for a short time at Farley, Iowa, and later at Elmo, Iowa. He entered the hospital service of the army during the Spanish-American War. After completing a course in pharmacy in Des Moines, he came to Imogene in the autumn of 1899, where he practiced his profession continuously until his death. On November 4, 1905, he married Miss Ann O'Connor of Imogene.

George M. Gould will be remembered because of his important contributions to medical literature, particularly in relation to medical dictionaries.

Dr. George M. Gould was born at Auburn, New York, November 8, 1848 and died at his home in Atlantic City, New Jersey, August 8, 1922, from heart disease at the age of seventy-three. He graduated in medicine from Jefferson Medical College of Philadelphia in 1888 when he was forty years of age. He began practice in Philadelphia making a specialty of

ophthalmology but devoted his time largely to literary work.

Dr. Gould was editor of the Medical News, Philadelphia Medical Journal on American Medicine, extending from 1891 to 1906.

MARRIAGES

Dr. Wm. Breen of Oxford Junction, and Miss Sara L. Kane of Cedar Rapids, were married at Cedar Rapids, December 2, 1922.

Dr. James Moorhead of Marion and May Loretta Riley of Marion were married November 12, 1922.

Dr. James McAllister of Odebolt and Miss Mildred Hall of Omaha were married November 21, 1922.

HYGEIA

One of the most important accomplishments of the American Medical Association is the publication of a "Journal of Individual and Community Health." It is not a "public health journal," but a medical journal for the people, that the public may know what the practice of medicine is. The public already know that the nature and causes of disease can only be determined by scientific investigation, but do not apparently know that these methods can be utilized in the treatment of disease. The public will grant liberally for scientific work which will secure them from disease, yet when it comes to the management of disease conditions, they turn to the most extraordinary and extravagant means of relief.

It will need the most skillful writers to interpret the scientific methods of discovering the nature, cause and prevention of disease into the management of disease. We would suggest that county medical societies use their influence in getting the public interested in this periodical, even to the extent of distributing copies among reading people who may desire to know what is really going on in the medical world and not leave the public to obtain medical knowledge from sensational sources.

BOOK REVIEWS

THE SUCCESSFUL PHYSICIAN

By Verlin C. Thomas, M.D., Visiting Physician to Franklin Hospital, San Francisco, California. W. B. Saunders Company, 1923.

Dr. Thomas introduces his discussion of the "Successful Physician" by the statement "that Life is a road and Success is the destination," and in 303 pages he points out the road which the physician should follow to reach success in the practice of medicine. Every young physician starts out with the idea of success and recalls the scientific and practical instruction he has received during the four or five years of study and wonders if this knowledge is sufficient to bring him success. From time to time he seriously doubts it. He finds that something more

is necessary; he does not know the world, or the people, or how the world measures the qualities of a medical practitioner, and he sometimes finds out in a most painful and trying manner. Unfortunately the most important facts cannot be set down in a book. Dr. Thomas, however, endeavors to help by recording the experience and observations of a life time, and lays down the fundamental facts in a most simple and direct manner, beginning with a consideration of the personality, making the best of what nature has endowed him with. His dress is taken into account, his language, his associates, his manner of address, how he may inspire confidence, how he may hold patients, and many other things that do not savor of quackery. How to maintain his personal dignity, to avoid too much familiarity.

A chapter is given to choice of location, which is really a matter of fundamental importance; the kind of people. A course of action which will succeed in one community may fail in another, because of different standards. When once decided on location, he proceeds to study the people, to put himself in line with community ideas as to address and language. Considerable stress is placed on office furniture and equipment. Doctors are often careless in this respect, and their offices are far from attractive; community taste should be taken into consideration.

It will be quite impossible to note all that Dr. Thomas says about the conduct of a successful physician, but the book is well worth reading, and, if carefully considered, a good doctor may save himself the necessity of changing his location because he has failed to fit himself into a desirable community, on account of having exhausted his good name in the effort to find out how people looked upon a doctor.

There are matters of business, social relationship, attentiveness and interest in the patient's welfare, student habits, books, journals, medical society activities. This public must know that the doctor is a high minded man and can be relied upon. He must have principles and opinions. He cannot expect to please every one and should not be a slave to every unreasonable demand, otherwise professional life would be a burden.

A TEXT-BOOK OF PHYSICS AND CHEMISTRY FOR NURSES

By A. R. Bliss, Jr., Ph.G., Ph. Ch. A.M., Ph.D., M.D., Lecturer on Chemistry and Chemistry and Materia Medica Grady Hospital Training School for Nurses, Atlanta, and A. A. Olive, A.B., A.M., Ph. Ch. Ph. M.D. Lecturer Hillman Hospital Training School for Nurses, Birmingham, etc. Third Edition, 70 Illustrations. Price \$2.50.

This is one of the Lippincott nursing manuals and is divided into two parts. The first is devoted to Physics and the second to Chemistry. The purpose of this book as set forth by the author, is to furnish the student of nursing in a concise form a simple and

clear presentation of those portions of physics and chemistry, which are of special interest and importance to the student and the graduate nurse.

The Lippincott Company is to be congratulated on their success in presenting a series of text-books on the various branches of scientific nursing.

The third edition has been thoroughly revised and rewritten and the two parts may be taught together and in such a manner that the study of physics and chemistry may be thoroughly co-ordinated.

A MANUAL OF GYNECOLOGY

By John Osborn Polack, M.Sc., M.D., F.A.C.S., Professor of Obstetrics and Gynecology, Long Island College Hospital; Professor of Obstetrics in Dartmouth Medical School; Gynecologist to the Jewish Hospital; Consulting Gynecologist to the Bushwick and other Hospitals; Fellow American Gynecological Society, etc. Second Edition; Thoroughly Revised; Illustrated with 139 Engravings and 10 Colored Plates. Lea and Febiger, 1922; Price \$4.50.

This manual of 396 pages serves as a convenient guide to the treatment of gynecological diseases. No attempt is made to discuss theoretical questions but rather to present approved methods of treatment, medical and surgical. Questions of diagnosis are presented briefly, and after determining from a physical examination the course of treatment, the various technic to be employed to remedy the conditions are set forth in a clear and concise manner. On reading the text one is impressed with the direct manner in which the needs of the particular case are stated, so that the surgeon is rarely in doubt as to what should be done.

The illustrations in the text are so arranged as to be of the utmost value in understanding the author's meaning and in following the course of procedure to restore or repair the diseased or damaged structure or organ.

The manual will be found of material help in gynecological practice.

IMPOTENCY, STERILITY AND ARTIFICIAL IMPREGNATION

By Frank P. Davis, Ph.B., M.D.; Fellow American Medical Association, Etc. Formerly Editor Davis Magazine of Medicine. Second Edition; Revised and Enlarged. Price \$2.25. C. V. Mosby Company, St. Louis, Missouri, 1923.

This book of 168 pages treats of the various questions of impotency and sterility from a scientific standpoint. The questions involved are of every day importance and relate not to any particular race, but to the world at large. It is a subject which is generally not thought proper to write about, but is of such vital importance, both to mankind and creation, and has so much to do with human happiness

and health, that there is no logical reason why physicians should not, from their opportunities, study the subject from the same standpoint that they study questions of health and disease.

The author presents a general consideration of the sexual instinct; the sense of smell, sight, hearing; the influence of dress and manners; the questions of impotence and sterility and the methods of treatment.

Dr. Davis feeling the importance of the various questions relating to sexual life, has written a very useful book, which should be extensively read by the members of the medical profession.

LECTURES ON DIETETICS

By Max Einhorn, M.D., Emeritus Professor of Medicine at the New York Post-Graduate Medical School and Hospital; Visiting Physician to the Lenox Hill Hospital, New York. 12 Mo. of 244 Pages. Price \$2.25 Net. W. B. Saunders Company, 1922.

This useful book is made up of seventeen lectures delivered at the New York Post Graduate Medical School. The first two relate to the principles of diet and nutrition and to the digestibility of foods in health and acute diseases, including some tables on the caloric value of certain food substances.

With this preparation the author passes to certain questions in relation to foods in the treatment of disease, under various divisions, as diet in acute diseases of prolonged duration, and in chronic diseases, particularly of the digestive tract. Dietetic Treatment of Chronic Diarrheas of Diabetes Mellitus, especially the Allen treatment; important tables given, Dietetic management of Gout and of Diseases of the Kidneys.

Two chapters are given on Rectal and Duodenal Alimentation. A chapter is presented on the preparation of foods for invalids. The book altogether is a useful manual on diet.

INJURY, RECOVERY AND DEATH IN RELATION TO CONDUCTIVITY AND PERMEABILITY

By W. J. V. Osterhont, Professor of Botany, Harvard University. This Is One of the Monographs on Experimental Biology Edited by Jacques Loeb, Rockefeller Institute; T. H. Morgan, Columbia University; W. J. V. Osterhont, Harvard University. J. B. Lippincott Company.

The purpose of this volume is "to treat certain aspects of biology according to the spirit and methods of the exact sciences. The treatment is confined to certain fundamental problems which have been studied quantitatively. These studies lead to a theory of some aspects of injury, recovery, and death, as well as of antagonism and permeability."

The experiments are made on plant life, and show for example, that certain marine plants taken out of its normal environment of sea water and placed in a

solution of pure Na Cl is at once injured and if exposure is long continued, the plant is killed. If before death occurs the plant is restored to its normal environment, life continues, but there has been a loss of resistance. The argument is to establish the fact that an injury to a living organism of any considerable degree, there is a change in electrical conductivity and permeability which ultimately leads to death. If, however, the injury is slight or of short duration, recovery will take place, but if the injury continues, to effecting organic change, the resistance will be reduced a certain per cent. In relation to recovery antagonistic agents or antidotes bear an influence, hence a chapter on Antagonism.

The studies presented in this volume are exceedingly technical, but have an extremely important biological bearing on the study of injury, recovery, and death and will tend to clear up some questions relating to permanent loss of resistance, the agents of recovery or per cent recovery, and finally death.

THE MEDICAL CLINICS OF NORTH AMERICA

July, 1922; St. Louis Number. W. B. Saunders Company.

Dr. Wm. Engelbach of St. John's Hospital furnishes the first paper on Endocrine Adiposity in which he considers overweight in a general way and then as a condition in endocrine disease. This discussion is taken up by Dr. John L. Tierney of St. John's Hospital, under the head of Pubertus Praecox and references are made to earlier observers. Pernicious anemia remains one of the most interesting diseases coming to the attention of the internist.

In this number Dr. Louis H. Hempelmann presents a discussion on treatment of Pernicious Anemia. Dr. Francis M. Barnes, Jr., gives a paper on Syphilis of the Central Nervous System, followed by a Neurologic Clinic by Dr. Sydney I. Schwab. There are altogether thirteen titles represented in the St. Louis number.

A MANUAL OF PHARMACOLOGY AND ITS APPLICATIONS TO THERAPEUTICS AND TOXICOLOGY

By Torald Solliman, M.D., Professor of Pharmacy and Materia Medica in the School of Medicine of Western Reserve University, Cleveland, Ohio; Second Edition; Entirely Reset; Octavo of 1066 Pages; Cloth \$7.00 Net. W. B. Saunders Company, 1922.

This book is of immense value to the pharmacist, as will be clearly apparent on examining the text, from many points of view. Not only to the pharmacist is this work of value, but to the physician who dispenses his own medicine. In many small towns and cities the writing of prescriptions has become a lost art, but this is not altogether material, or lessens the value of the book, for the physician really needs the advice and direction laid down in many

sections of the work. The arrangement of the book is set forth in the following sections:

Arrangement—Two sizes of type have been used throughout, the larger print giving a connected and concise statement of the essentials of pharmacology, the smaller type containing more detailed data for consultation.

Plan—To those drugs that are really and generally used extensive consideration is given. The new drugs and remedies are emphasized with definite instructions for their use.

Prescription Writing—This section is simple, easily understood, and will fully equip the student for the correct writing of prescriptions.

References, especially to recent literature, are numerous and of valuable assistance. There is an extensive bibliography of fifty-nine pages.

The Appendix, in addition to the extensive bibliography, contains a tabulation of average doses classified with reference to their importance and a check-list of important preparations.

Newness—The revision for the second edition, published February, 1922, was unusually heavy, the book being reset from cover to cover. Important additions and changes have been made to every part of the text.

HOW WE RESIST DISEASE

An Introduction to Immunity (Lippincott's Nursing Manuals), Jean Broadhurst, Ph.D., Assistant Professor of Biology, Teachers College, Columbia University; 4 Color Plates; 248 Pages, 138 Illustrations; Price \$2.50. J. B. Lippincott Company, 1923.

This book, designed as a brief introduction to the exceedingly technical and apparently limitless field of immunity, has been prepared with special reference to nurses and general college students whose programs, ordinarily afford opportunity for but a single brief course in bacteriology, the needs of medical students and those able to devote more time to the subject being already well met by the several excellent and comprehensive text-books on bacteriology and immunology. The author's aim has been to put into clear and simple language the main principles of immunity, covering in a general way the most important preventive and curative practices. To attain this end briefly, without affording opportunity for a large number of attendant misconceptions, is no simple task, and much attention therefore has been given to the illustrations, not only their number, variety, and range, but their legends as well. It has thus been possible to present a few of the more difficult topics in two—sometimes three ways—the text, the illustration, and the description used with the illustration. In all cases every effort has been made to give enough detail to enable the student to picture the process or the phenomenon under discussion. The terminology has been made

as non-technical as possible, many of the scientific terms being used parenthetically only.

Contents—Acknowledgments. Preface. Bacteria and their effect upon the human body. Active immunity passive immunity. Toxins and antitoxins. Agglutinins and precipitins. Opsonins. White corpuscles. Lysins. Vaccines. Anaphylaxis. Glossary. List of Infections and Casual Organisms. Advanced References on Immunity. Index.

PHYSICAL DIAGNOSIS

By W. D. Rose, M.D., Lecturer on Physical Diagnosis and Associate Professor of Medicine in the University of Arkansas; Visiting Physician Little Rock City Hospital, and St. Vincent's Infirmary, Little Rock, Arkansas. Third Edition, 319 Illustrations; Price \$8.50. C. V. Mosby Company, St. Louis, 1922.

This book of 755 pages presents a full discussion of the questions of physical diagnosis. The importance of studies of this character are so well recognized that no argument is necessary; the only question is the individual merit of the particular book. The arrangement of subjects presented and the illustrations are of the first importance and in this particular Dr. Rose has been fortunate.

In reviewing the order of presentation, we have been pleased, particularly in relation to the cardiovascular system. So much study is necessary to a full conception of the diseases of the heart and blood-vessels, that we feel the author is justified in the space given this important subject. The same may be said of other systems. The book is well worth a favorable consideration by the profession.

AN OUTLINE OF THE PIRQUET SYSTEM OF NUTRITION

By Dr. Clemens Pirquet, Professor of Pediatrics at the University of Vienna, Austria; 16 Mo. of 96 Pages. W. B. Saunders Company, 1922. Cloth \$2.00 Net.

This interesting little book is based on a four volume system prepared by Pirquet, published in the years 1917-1919 and read when Dr. Pirquet was invited to be a Silliman lecturer at Yale University, in the winter of 1921-1922 on Modern Pediatrics.

The first chapter is on Body Measurements and Nutrition, including Sitting, Height and Intestinal Surface.

A second chapter relates to Calories and Nems, including an explanation of terms used and food values, particularly milk for infants, including also other items of food. Feeding in the First Year of Life. Nutritional Treatment of Tuberculosis. Proper Feeding as Preventative Medicine, including a long list of references and a table of the Nem Value of the Principle Foodstuffs.

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PRESIDENT'S ADDRESS*

CHARLES J. SAUNDERS, M.D., Fort Dodge

In the medical press of the country during the past year much attention has been given to the subjects: General Practice, Over-specialization, Group Practice or Clinics.

All of these articles sound a note of warning that the profession is getting away from its moorings and heading for dangerous waters.

I believe that it is our common observation that in recent years there has been an increasing tendency on the part of the members of our profession to confine their efforts to some one of the specialties. Admitting this to be true, the question naturally arises, "Is the community at large properly served? Have we too many specialists and too few general practitioners?"

Another apparent tendency of the times is that the smaller villages and their surrounding rural communities are being inadequately served by the medical profession. Why do these conditions exist? A natural supposition is that the law of supply and demand would regulate them, but apparently this usually reliable regulator is not functioning efficiently. Our profession is a profession of service and it is therefore our duty to so minister to the health of the community that the greatest possible service shall be rendered to each and every individual under our care. Do not understand me as advocating that the individual physician should be denied the right of self-determination, but a way must be found to correct the evils.

There is no scarcity of physicians in this country, as statistics show that we have one physician for every seven hundred of population, a proportion much greater than that of any other country in the world.

If our methods of education are in any way responsible for this condition, I have that confidence in the wit and wisdom of our teachers of medicine that the proper remedies will be applied.

Each teacher of medicine is naturally a specialist in the subject that he teaches. He attracts by his personality a following among the students and many of them, by such attraction, elect to follow him in his restricted line of work.

It would be better if the newly graduated physician would practice general medicine for a sufficient length of time to become familiar with the signs, symptoms and causes of the diseases which are prevalent in the community. In this way he would broaden his vision and lay a better foundation for any special line of work which he might elect to follow afterwards.

With very few exceptions all the men who have risen to eminence in the various specialties have graduated from the ranks of general practitioners and a very appreciable proportion of them labored and became masters in their profession while living in the smaller communities.

The Journal of the American Medical Association, discussing this subject in a recent editorial, stated that: "the greatest medical achievements were not those of men working in great organizations, but of individuals utilizing to the utmost each his own opportunities." That "Boerhaave changed all of European medicine with twelve beds." That "Corrigan rewrote the chapter on heart disease with only six," and that "Kulz, whose work fills one-third of all the volumes on diabetes had only two patients."

I do not mean in any way to minimize the advantages of the large amounts of clinical material gathered into a centrally located hospital, nor the advantages of a well equipped modern laboratory, but these aids to good work are necessary only in the smaller number of the cases which we are called upon to care for.

Dr. Frank Billings informs us that: "A correct anatomical and functional diagnosis can be made in from 80 to 85 per cent of all the patients of an average community by a qualified, industrious, painstaking general practitioner, by the sole application of the trained mind, the special senses, the hands and an always available simple laboratory equipment." The diagnostic value of

*Presented before the Seventy-Second Annual Session, Iowa State Medical Society, Ottumwa, Iowa, May 9, 10, 11, 1923.

the newer laboratory findings is constantly changing and it is poor judgment to pin one's faith to them if a good clinical picture, which has stood the test of time, tells you otherwise. Any new method of diagnosis or treatment should be well digested before it is accepted as definite and conclusive. The wrecks of short lived beliefs strew the paths of medical history. There are many laboratory tests which are important aids in arriving at diagnostic conclusions, but the modernly trained physician is capable of making nearly all of them, either at the bedside or in his own office. A limited number must of necessity be referred to where there is more extensive equipment. Too many physicians, accepting the newer methods as conclusive, expect the laboratory worker to make the diagnosis. If an x-ray picture or other laboratory test is always conclusive, the chief function of a physician is that of a middleman between laboratory and patient.

Why does the profession shun the smaller communities? Several reasons are put forward. The pecuniary reward is limited; the social life is not satisfactory; the work is more laborious; the educational advantages are too limited. I believe all of the reasons given are in nearly all cases exaggerated. From personal observation I am fully convinced that the pecuniary reward of the country practitioner is greater than the average of the city practitioner. We are blinded by the outstanding success of the few and the all important item of overhead expense is lost sight of. I know of few rural practitioners in this community, who have done efficient work and who have used ordinary business judgment in the care of their earnings, who have not accumulated a very fair competence. The social side of life is as to one's tastes. The man in the country longs for the city; the man in the city goes to the country, if he has the price. There are congenial spirits in nearly all communities and if we pause to consider, our social pleasures are largely confined to our associations with a few intimate friends.

The educational disadvantages are real but can be overcome with a little extra effort and expense.

In any business or profession an outstanding success attracts immediate attention and many fall into the error that the form of the organization or its method of operation is responsible for its success. The ability and personality of the creators of its success are too often lost sight of. The marked evidence of a few shining examples, coupled with the spirit of unrest that seems to pervade all walks of life, is no doubt responsible for the common practice of physicians forming

themselves into groups or clinics, so-called. Does this new venture work to the benefit of the medical profession? Or, what is much more important, does it work to the benefit of our patients? The medical profession came into existence to combat the ills of mankind and unless we keep ever in mind the necessities of our patient's well-being we are not true to the trust we have assumed. A very grave question has arisen as to the value, to our patients and to our profession, of the many groups or clinics that are coming into existence. Last year, at a meeting of the Ohio State Medical Association, Dr. Martin H. Fischer of Cincinnati, rendered a very caustic criticism of the modern clinic. Among other statements he said: "I know a place where one can serve himself to a diagnosis as one serves himself to a meal in a cafeteria. One starts with a numbered card and buys himself at different counters and from different men a general examination, an investigation of the throat, an x-ray plate of the gall-bladder, a dental overhauling, a surgical operation and a plaster cast to the foot. Each item carries its price which is punched on the ticket. What the scheme takes no account of is that the patient does not care whether he has Hirschsprung's disease, erythema nodosum or pseudo-hypertrophic muscular atrophy. What he is after is a plain statement of what is the matter with him, and whether he can be cured or not; also there is wanted a little appreciation of his state of mind and some understanding of the economic hardships of his family in the interim of being ill. The food counters do not carry these dishes."

Though Dr. Fischer's criticisms are severe, there is, I believe enough truth in them to warrant his caption, "Whither?"

But I think it a mistake to place all groups in one class and charge them as a class with the sins of those who do not live up to the highest ideals of the profession.

Some groups are formed, each by several general practitioners who share office rooms in common and may have laboratory and x-ray equipment equally accessible to each, but each one ministering to his own patients in the usual manner, though calling upon his associates for counsel and assistance, either formally or informally, as the circumstances in each case warrants. The only objection to such group practice would be the tendency of its various members to confine their calls for counsel or assistance to the members of their own combination when the welfare of a patient might demand the services of ability not within their group. Consideration of the best

treatment available for our patients should be our first thought.

A group may be formed wherein one or two men, of high ability and dominating personality, control and direct all of its activities. A group of this character may render valuable medical service to the community in which it is located, if the ideals of its management are what they should be. Too frequently a group is formed by a number of men of fair ability as general practitioners, but not having specially qualified themselves for the practice of the various specialties. They start a so-called clinic and expect the public and the profession to fall for it. If such an organization lives long enough, each of its component parts may become fairly proficient in its several departments, but the character of the work done in the interim will be no professional adornment. And lastly there is what the public is beginning to recognize as the commercial clinic. Its personnel may or may not have professional ability, but it generally has some business ability. The net-financial return is its chief goal. I am happy in the belief that there are few such, and I am fully convinced that where mistakes have been made in the formation of the various other groups, they have been mistakes of judgment and that with a little further time for consideration and taking of stock of the situation, that they will discard any methods of practice which are not consistent with the best interests of their patients and the interests and good name of the medical profession. If this does not come about, if the members of the profession continue to form themselves into groups as clinics, until the individual doctor will be the exception rather than the rule, the day of state medicine will be very materially hastened thereby and, if I mistake not the temper of the profession at large, this is not "a consummation devoutly to be wished."

We should realize that the practice of medicine should never get away from the personal relation of patient and physician. "The medical profession," Dr. Fischer says, "will increase or lose its public only as the collective expression of the people's faith in the individual doctors who touch them." Individuality and close personal contact beget confidence and confidence is one of the greatest assets of the physician. It is not only a business asset but it is a definite aid as a curative agent. In group practice close personal relationship must, of necessity, be a minor factor. I believe the near future is bright with promise to

the general practitioner if he is awake to his opportunities.

The recent advances in medicine have been many and marked but the great bulk of these advances have been almost wholly in the field of preventive medicine. Great benefits have come to the world from the knowledge thus gained but the benefits could be very markedly extended by carrying this work into the homes and to each and every person in them. If this work is to be done and done effectively, it must be done by the family doctor. The people are awakening to the need and to the advantages of it, as evidenced by the public health centers and public health nurses.

Dr. John M. Dodson says: "The family physician should become the family health advisor, and find his largest usefulness and derive a large part of his income in the field of preventive medicine."

What objection could there be to a physician taking a retainer, of proper proportions, from a patient for the purpose of guarding the health of the patient and his family? Why should he not make careful general examinations at regular intervals? And why should he not visit the homes of his patients and teach them habits of living that would keep them healthy and prolong their lives? When our patients come to realize the value to them of such services, they will cheerfully pay for the services rendered. It is common knowledge that the physicians' fee is the smaller portion of the expense to the patient in an average case of illness, and it will be a dullard who will not choose both health and a saving of expense.

They physician of today is better equipped to practice medicine than ever in the past, but if he is to be of the highest service he must combine with his improved knowledge and equipment, the great human qualities of his predecessors; great common sense, kindliness, tolerance and appreciation of the mental attitude of those who come to him for assistance. He must get away from the spirit of commercialism. He must never say, "What do I get out of it?" but, "What can I put into it?" A spirit of cooperation should be ever present in all our relations with our fellow practitioners, not a cooperation confined to those with whom we are intimately associated but extended to all.

The world has placed us upon a pedestal with faint protest on our part. If we wish to maintain that high position we should ever make an effort to merit the esteem in which we are held.

METHODS FOR PROMOTING RAPID HEALING IN THE SIMPLE MASTOID OPERATION*

L. L. HENNINGER, M.D., F.A.C.S., Council Bluffs

What do we consider an average period of time for healing of the wound following an operation for acute mastoiditis? What are some of the causes for the delayed healing in our obstinate cases? What of the cases which refuse to heal at all? Can we in selected cases materially shorten the time of healing by innovations from the accepted routine of after treatment? These are questions which concern all aural surgeons. The question of time in the management of a surgical case is secondary only to the question of safety to the patient and the retaining of the most possible hearing function, in the end result. Kopetsky states that after the simple mastoid operation, healing is usually completed in from six to eight weeks. That seems to me to be allowing plenty of time. Most authors will give a somewhat shorter period. In a large share of cases I am sure that this time can be very materially shortened.

Concerning the operation itself for acute mastoiditis, I think we are all agreed that there must be a complete exenteration of all mastoid cells and diseased bone, where we expect prompt healing, no matter what our methods of treatment subsequently. No wound will heal while there yet remains diseased cells or necrotic bone in any part of the mastoid cavity. The best we may expect in such cases, where foci of infection is not completely eradicated, is a fistula or chronic, purulent discharge. It is with the primary treatment and subsequent dressings that I have to deal largely in this paper.

For years the only plan used was that of packing the wound with gauze strips, iodoformized or plain sterilized, allowing the wound to heal by granulation from the bottom. This plan called for repeated dressing continued over a long time, entailing much suffering at each dressing. In certain virulent infections that seems to be still the safest and surest plan, though consuming considerable time and requiring much patience. Of late years, there has been a tendency to depart from this as a routine procedure and to substitute more modern methods whereby in many cases rapidity in healing is promoted. First of these I will mention the post auricular drainage method.

The Post Auricular Method—This plan is a distinct advance over the painful gauze packing method. It has to recommend it, a less open cavity and heals with less scar, and the dressings are less painful. Also it requires ordinarily less time to heal, especially in children. There can be no question but that too snug packing tends to retard rapid granulating. The lips of the wound are closed by sutures or clips and the use of some form of drainage material which passes out through the lower portion of the wound or through a stab wound made for that purpose. A favorite method is to insert split rubber tubing containing a folded wick of gauze into the antral opening and close the margins of the wound over it allowing but a small opening at the dependent portion for drain. The tube with wick enclosed can be gradually withdrawn as the cavity fills in. This is sometimes supplemented by packing loosely about the tube with gauze strip when the cavity is unusually large. The post auricular drainage method undoubtedly is an improvement in the case of children. In large cavities one must be alert for soft unhealthy granulations and occasionally do a little curetting. This will usually be in the case of an adult with extensive bone development. Careful inspection from time to time will prevent the possibility of overlooking this condition.

The Blood Clot Method—The practicability of this procedure has been questioned by many but it seems to me that its success in many hands, in selected cases, entitles it to consideration. This method comprehends the filling of the exenterated mastoid cavity with blood which clots, and over the clot the periosteum and skin are closed by sutures, or sutures and clamps. No drainage is allowed except such as takes place through the opening in the tympanic membrane and possibly a small wick or tube in the inferior angle of the wound itself to take care of any possible oozing in the first twenty-four hours. The opening in the membrana tympani is enlarged if necessary to afford adequate drainage. Completeness of exenteration as well as a faultless technique is essential to the success of this operation. Also it is applicable only when there is no complication. Ordinarily it is not only inadvisable but it is also inadmissible to close up completely the cavity when the streptococcus mucosus or streptococcus hemolyticus is the infecting agent, or when an extradural abscess or sinus thrombosis has been encountered, though I have successfully clotted one case of the former where the virulence was mild and the extension apparently arrested.

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It is claimed for this operation when indicated and where successfully performed:

First—An undoubted saving in time, healing being often accomplished in a few days.

Second—It makes for comfort to the patient as it does away with painful dressings.

Third—Its cosmetic effect is good since there is little resulting scar and practically no depression.

Furthermore, failure to successfully clot at the original operation does not offer any obstacle to a successful second attempt at a later date when remnants of the broken down clot have been removed and the cavity made sufficiently sterile by packing and treatment to warrant letting it being filled again with a fresh clot. In fact it is sometimes possible to do a secondary clot operation on some of the cases in which it was deemed inadvisable to attempt a clot operation originally. This of course depends on our being able to get the cavity sufficiently clean. The time for such attempt is determined by the appearance of the wound, absence of discharge, and the character of the laboratory reports on smears taken from within the wound. In a series of thirty-two cases attempted by me in the last two or three years I submit the following results: Twelve perfect results; eight that could be classed as successful as there was but a small amount of a brownish, serous fluid from the inferior angle of the wound, and the usual sero-purulent discharge from the middle ear for a few days, and practically no depression on healing; twelve in which the breaking down of the clot was complete. This for the original operation. When I began this series, laboratory facilities were not always easily available. A better knowledge of the bacteriology of some of these latter cases would no doubt have obviated some of the failures and thus increased the percentage of successful results. Where infection occurred it was only necessary to reopen the dependent portion of the wound and insert some form of drainage. There were practically no untoward effects on the patient and very little if any loss of time from having made the attempt to clot. The past winter my mastoid infections have been in a large majority of the streptococcus hemolyticus variety and hence I made few attempts with the blood clot. In conclusion I will cite three cases which have previously been referred to in another article.

Case 1. E. M., boy, aged seven, was referred to me April 29, 1921. He had been operated on for acute mastoiditis in January of the same year in another city. The wound following the original operation would not heal, the purulent discharge from a sinus behind the ear persisted though the wound had

been irrigated and dressed daily up to the time I saw him April 30, 1921. Examination at that time showed a discharging sinus from the mastoid wound but there was no pain and no fever. I sent him to the hospital, and, on reopening the wound found many of the tip cells with pus and granulations remaining. After making a thorough extenteration the cavity was allowed to fill with blood and the wound was closed with clamps. These clamps were removed on the third day. On the fifth day the patient returned home with no discharge from either ear or mastoid and ten days later the clot was firm and perfectly clean.

Case 2. D. W., boy, aged four, was operated upon for acute mastoiditis May 31, 1920, by another surgeon. The wound healed promptly at the original operation but the discharge from the external ear kept up persistently. On March 23, 1921, the child was taken sick and two days later developed pain in the opposite ear, and increased discharge from the originally infected ear. Myringotomy was promptly done in both membrani tympani, but symptoms of an acute mastoiditis rapidly developed on the right side almost simultaneously swelling over the area of the previous operation on the opposite side with some pain and fluctuation. March 28, or nine months after the first mastoidectomy, I operated on both mastoids. The right side showed complete involvement, and the cell development was extensive. The left side, which had been discharging through the external ear for nine months, showed a subperiosteal abscess, and the interesting part of this was that a fistulous opening was found leading from the middle ear back into the zygomatic process for the space of nearly one inch with pus exuding. This had been overlooked at the previous operation. Both sides were closed over blood clots with complete success as no packing or drain was subsequently required in either case.

Case 3. V. H., a young woman, aged 16, a resident of Council Bluffs. She had a typical onset, middle ear involvement followed by mastoiditis. At the time of operation there were edema and swelling over the affected area and considerable pain. At the time of the operation the involvement of the mastoid was found to be complete and much pus from it, apparently under some pressure, presented immediately upon opening the mastoid cortex. A short chain streptococcus was shown by smear and also by culture to be the infecting agent. I clotted this case with some misgivings, but the subsequent healing was uneventful. The clot held firm and the cosmetic effect was perfect.

Discussion

Dr. Chas. M. Werts, Des Moines, (opening)—It seems to me that Dr. Henninger has stated the case very well. So far as my experience with the simple mastoid operation is concerned, since giving up dressing the wound with gauze, I have used nothing but post-auricular drainage; the rubber drainage tube, closing with the metal clips, and where I have suc-

ceeded in cleaning out all the diseased cells, I have had very little complaint, usually requiring from two to three weeks to completely close up the wound. With the blood-clot dressing I have had no experience, for the reason that it never appealed to me as a surgical procedure. The only difficulty with the post-auricular drainage, in my experience, has been that occasionally it would be a little slow in closing, after removing the drainage tube. Suppose we leave it in two weeks or ten days, whatever time necessary to get rid of the principal part of the drainage, then by swabbing it with a little iodine, silver nitrate or alcohol, or packing with a small wick of gauze, they usually granulate shut in a short time. The advantages, as the doctor stated, are that you have practically no scar or depression and you are assured of good drainage. In my experience, it has been most satisfactory.

Dr. Gordon F. Harkness, Davenport—My experience with the blood clot dressing is very limited. My understanding is that the one particular objection to the blood clot dressing is not the immediate after-effects, but the fact that six months or a year later there may be a breaking down in those cases where blood clot dressings have been used, that is, those cases are more prone to a secondary counter infection in the matter of a year or eighteen months, and following that reasoning or that assertion by that group of clinicians, I have rather stayed away from the blood clot dressing but have used the post auricular drainage with very often nothing but a tube, no gauze at all, and allowing the posterior wound to close as soon as drainage through the auditory canal ceases.

Dr. L. L. Henninger (closing): I do not think I have anything to add in this regard. I have seen one or two break down, not more, but it was simply a reinfection starting in the middle ear, the same as we may get in other mastoids post-operative. I do not think more so. This has not been a late result however, but comes early and is listed as imperfect result. When we do get a nice case, it is very satisfying to see the smooth contour of the head and the small scar is absolutely perfect, no painful dressings and it appeals to one. The whole thing, I think, can be summed up in selecting our cases. If we do a little laboratory work at the time of operating and get a report on our smears, find out whether it is a mild or severe infection, we can handle the case more successfully. I think in all cases, it is worth while doing this and then decide what method we will adopt in this particular case.

SPINAL PUNCTURE AS AN AID TO DIAGNOSIS AND THERAPEUSIS*

JOHN F. HERRICK, M.D., F.A.C.S., Ottumwa

Medicine has recently evolved from the stage of empiricism into that of a more or less exact science. There are men now living and still in the active practice of medicine who can bear testimony to this change. The progress has been rapid, even though at times it appeared as if insurmountable obstacles stood in the way. Every departure from the former practice has not however, been an advance. As in all new movements some things that are good went into discard with the obsolete and useless. One may mention the careful and systematic use of the five senses in a study of the patient prevailing formerly, which is at present too much neglected, too much dependence being placed on newer methods. Nor is the patient as a whole; his mentality, his physical development, his heredity and his cultural opportunities and environment given as much consideration as formerly. The information thus secured was not always diagnostic and final, but it was highly illuminating and suggestive. In place of these former methods are now substituted more or less dependable laboratory tests. Some of these tests would be positive and final if one could eliminate the human factor. For instance, certain specific arrangements of cells are found only in malignant disease, yet there is failure to recognize them or again a difference of opinion as to the proper interpretation of the findings. Specific bacteria are revealed by the microscope; gastric and kidney functions may be studied, as can disease of these organs be revealed by chemical and microscopic examination. Temperature readings, blood-pressure findings, basal metabolic rate findings, kidney function tests and Wassermann tests, are some of the refinements in diagnostic methods upon which the modern physician leans. Chemistry or the microscope do not lie, but human powers of observation are limited, and human judgment is fallible even when the greatest effort has been put forth to avoid error. It behooves the physician to walk carefully and circumspectly, using all the best methods of our fathers together with the newer, and in many cases more exact methods of the present.

Among the newer methods which has become established is the operation of "spinal puncture" for diagnosis and therapeusis. It is about thirty years since the operation was first performed by



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Quinque. For several years the operation was not generally accepted and progress was slow. Recently, however, it has become one of the important methods of diagnosis; one which often gives positive and conclusive evidence. There are a few signs and symptoms that are diagnostic; so also there are a number of laboratory tests which give diagnostic information. The great desideratum is farther additions to the specific, definite diagnostic methods now known. Spinal puncture as a diagnostic method, may be classed with microscopic examination, chemical analysis, basal metabolic rate determination, kidney function tests and so on. It gives valuable evidence in certain diseases and at the same time opens for the physicians a new method of introducing medications into the system.

The advantages of spinal puncture in suitable instances, probably can best be illustrated by a brief report of cases. The cases are reported only in so far as is necessary in connection with the spinal puncture, all other details are omitted. The diagnosis and treatment of lues by spinal puncture is not considered. This is already a well recognized method in syphilis of the nervous system. The cases reported are all acute and in the majority there was infection. In certain cases the findings were positive and led to a ready diagnosis, while in others they were negative and yet were worth while, since in certain cases the puncture alone and withdrawal of fluid gave relief, in others they allowed the physician to direct his attention into more fruitful channels.

Case No. 1. An infant eighteen months old had been very sick for several days. The temperature was 105, there were severe almost continuous convulsions and marked rigidity. A puncture gave a purulent fluid under high pressure. Twenty c.c. were withdrawn, the convulsions ceased, and the rigidity was less. The fluid was filled with pus cells and contained large numbers of a diplococcus, nature of which was not determined. An interesting experience in this case was to see the cocci multiply rapidly by division every three to five minutes in the fluid under the microscope. The patient was not benefited except in relief from convulsions.

Case No. 2. Child two and one-half years old who had been sick several days was in almost continuous convulsions. A puncture showed a milky fluid under pressure of 45 m.m. of mercury. Twenty c.c. of fluid were withdrawn, pressure reduced to eight m.m. of mercury. A diplococcus was present. No benefit was derived except relief from the convulsions.

Case No. 3. Infant twelve months old after ten days of mild illness developed convulsions. The history was suggestive of tuberculous meningitis the spinal fluid was under high pressure, and was characteristic of that in tubercular meningitis but was

negative to microscopic and inoculation tests. The convulsions were much relieved, but the patient died in a few days. No post mortem was secured.

Case No. 4. One of this class is typical of several. A girl five years old taken with what appeared to be influenza or a cold. After five or six days developed a meningismus. Within twenty-four hours she was in almost continuous convulsions. The temperature was about 103, pulse 120. Spinal puncture showed apparently normal fluid under 40 m.m. of mercury pressure. The cell count was normal, no growth on culture. The convulsions ceased when 30 c.c. of fluid were removed. The patient rapidly convalesced.

Case No. 5. A girl of six in whom a diagnosis of Henoch's Purpura was made, after two or three weeks of irregular sickness in which the temperature was not high except on a few occasions, developed almost continuous convulsions, after several hours a spinal puncture was made. The pressure was only about 14 m.m. of mercury. However the fluid flowed very freely and 20 c.c. were withdrawn reducing the pressure to 5 m.m. of mercury. The convulsions stopped and did not return although the patient was several weeks in convalescing. Signs of faintness came on about five minutes after the needle was withdrawn suggesting that it probably were better if a smaller quantity of fluid was taken. The fluid was negative.

Case No. 6. Boy aged six developed tetanus from a scratch on the toe. The symptoms of a well developed tetanus were present. A spinal puncture gave a normal fluid but under high pressure which was not measured. Forty c.c. were drawn and 5000 units antitoxic serum injected intraspinaly. Next day 20 c.c. of fluid were drawn and 5000 units serum given. On the third day 60 c.c. fluid was withdrawn and 5000 units of serum given. So on the fourth day 10 c.c. was drawn and 5000 units of serum given. Altogether in four days 130 c.c. of spinal fluid was withdrawn. Large quantities of serum was given subcutaneously each day. After the fourth day improvement was rapid. Wrist drop of the left wrist was present when he got up but in the course of several months it recovered.

Case No. 7. An ex-service man who had influenza pneumonia in France three months after his return developed headache. After some days it became very violent and he was brought to the hospital. It was evident there was present a meningitis. Spinal puncture gave a milky fluid under moderate pressure. The laboratory reported large numbers of pneumococci (the type was not determined) in the fluid. A large dose of a mixed type pneumococcal serum was injected. The puncture was repeated for five days in succession and serum introduced, at the end of which time the condition was so much improved that farther intraspinal treatment was not considered necessary. The recovery was rather slow but quite satisfactory.

Case No. 8. A married woman about thirty-five years old while doing her work in the kitchen at

about nine or ten o'clock in the morning was taken with violent abdominal pain. When seen by her physician shortly after noon her agony was extreme. Pain was also developing in the head. During the afternoon the condition rapidly became worse, stupor developed, also considerable rigidity. The temperature was not very high nor was the pulse quick. At eight o'clock that evening a spinal puncture revealed a bright red bloody fluid under high pressure. Sixty c.c. was withdrawn. Judging by the color and by the red cells on the slide the blood content must have been between 10 and 20 per cent, the cells were not counted. There were large numbers of a diplococcus present only a few of which were intracellular. However antimeningococcus serum was injected. After three or four hours the stupor lessened or rather verged into delirium. The puncture and serum injection was repeated four days in succession when all the symptoms were so much improved that it was thought unnecessary to repeat them. In each instance the fluid was under greatly increased pressure and was bloody as described. The last specimen however showed considerable improvement. The patient's recovery was slow but eventually complete.

These few cases do not begin to cover all the conditions in which spinal puncture is useful, but they show how varied may be the findings on spinal puncture. They also give some encouragement in the treatment of cases by means of spinal puncture which it would be difficult to reach by other means.

It may be said in conclusion that spinal puncture in properly selected cases gives positive and conclusive information on which to make a diagnosis; and that it opens another avenue through which remedial measures in proper cases may be instituted; in a class of cases that cannot be reached by any other method. Therefore, we should be prepared to do spinal punctures when it is called for, under all the necessary surgical precautions as to asepsis. The pressure of the fluid should be measured. The quantity withdrawn measured and a specimen in a sterile container sent to the laboratory. However, in serious cases seen away from the hospital, the microscope should be at hand and as many facts as to the character of the fluid determined at once so that necessary therapeutic measures may be instituted. Delay in such cases is often fatal, therefore, a bedside diagnosis even many miles from a laboratory should be undertaken, although of course, specimens must be immediately dispatched to the laboratory to confirm or correct the bedside diagnosis.

Discussion

Dr. J. W. Rowntree, Waterloo—The information derived from examination of the spinal fluid and the

relief experienced in its removal is greatest in the acute inflammatory conditions, such as septic meningitis, epidemic cerebrospinal meningitis and tuberculous meningitis. Spinal puncture is claimed to be of great diagnostic value in early syphilis. Scott and Pearson claim that *treponema pallida* invades the system at a very early stage and can be determined by examination of the spinal fluid. No case of syphilis should be discharged without one or more spinal fluid examinations. In a series of ninety-one cases of early syphilis, all giving a four-plus serum, but none a four-plus spinal fluid reaction, McIver found a slight increase in lymphocytes. On the other hand Fields, Parnell and Maitland, in 624 cases of syphilis, found only moderate pleocytosis in 18 per cent and slight in 12 per cent. Technique: Spinal fluid should be withdrawn carefully and leisurely in sterilized containers, discarding the first c.c. and making cell count when fluid is absolutely fresh; should be slowly withdrawn to minimize the subsequent headache—not more than 5 c.c. withdrawn for diagnostic purposes. The danger of spirochetal meningitis following spinal puncture in the septicemia stage should be reckoned with. The examination of spinal fluid in early syphilis detects cases of neurosyphilis, which might otherwise be overlooked—the basis of intraspinal therapy rests wholly on clinical results, and often it is given credit which might have been gained by systematic treatment. Very little can be said about the curative influence of spinal drainage in neurosyphilis. Dercum claims good results. Fordyce says it is valueless. In skull wounds, Bontier and Loigre are of the opinion that the unilateral vascular disturbances liable to follow injury of the brain may be favorably influenced by spinal puncture. Different authors have claimed that lumbar puncture is indicated in the treatment of concussion of the brain, fracture of base of skull, and in all cases of irritation of the cortex with increased secretion. Brady uses spinal puncture in suspected cases of meningeal hemorrhage in newborn. Musser and Hufford find lumbar puncture helps in controlling the delirium of lobar pneumonia, delirium tremens, epileptic mania, and apoplectic convulsions in paretics. Lumbar puncture and withdrawal has been found to give excellent results and relief of symptoms in encephalitis. In cases of coma in which diagnosis is in doubt, lumbar puncture is indicated. Excess of urea phosphates with decrease in chlorids is of importance in uremia. All results obtained by laboratory examination of fluid must be considered as an aid to diagnosis.

Dr. Herrick—I did not pretend to take up the entire field of usefulness of lumbar puncture. As stated, I did not consider syphilis at all. However, I do believe that there are many conditions aside from the few I have mentioned wherein spinal puncture would be worth while; for instance, in encephalitis, examination of the spinal fluid tends to exclude other conditions. In such cases as injuries produced by blows on the head or in other ways, it is

claimed that if the spinal fluid is under normal pressure the skull should not be opened, if the pressure is high the skull should be opened. The cases cited in my paper, convulsions, tetanus, meningococcus meningitis, etc., were selected because they all differ one from another, showing the variety of conditions that may develop, as illustrated by the case of pneumococcus meningitis, in which treatment was followed by recovery when this is considered impossible or improbable. When there is a large amount of blood in the spinal fluid I believe this procedure is worth while. In the case of tetanus I was astounded at the high blood-pressure, and also spinal puncture opened up the best way of treating the condition, introducing the serum into the spinal canal.

POST-OPERATIVE TREATMENT OF PERITONITIS*

HARRY E. PFEIFFER, M.D., Cedar Rapids

My excuse for occupying a few minutes of your time today is, while going over the post-operative treatment of peritonitis, to lay especial emphasis on two or three things which in our experience as well as that of others seems to have been provocative of better results in preventing the full development of parietic ileus.

Success in the treatment of the various degrees of this dreaded complication is all too small and it seems that anything we can do in the face of what seems to be an almost unsurmountable obstacle where once developed is all worth while.

Whatever is the best treatment of peritonitis, in all its phases, will lessen complications and increase the resistance of the patient to better withstand the toxemia and exhaustion. While we have prepared no statistics we feel sure that we have improved our mortality.

Whereas a generation ago, the mortality of perforated suppurative appendicitis was 90 per cent. Now 90 per cent are saved. As I have intimated, I will pass over the general treatment, emphasizing two or three features which have given better results.

Anesthetic—For the last eight years I have used N₂O quite extensively, employing at all times the same anesthetist, a man trained at Lakeside. I believe in the anoci-association and all Dr. Crile has told us in regard to anesthesia and shock.

I will say to those who may not have used N₂O extensively that at least 20 per cent ether in conjunction with N₂O, we have found advisable in surgery of the upper abdomen and where there is

rigidity, such as we have in peritonitis unless only drainage is to be established.

I prefer in all peritonitis cases not to cut muscle at right angles. The price of N₂O anesthesia now is almost prohibitive to the greater class of patients but I believe the time will come when all flourishing hospitals will be equipped to give it at a price within the reach of all.

Incision—Where it is only a question of drainage, or where small incision will suffice, I prefer access by muscle splitting but otherwise the rectus incision.

Care of Perforations—Perforations of the gastrointestinal tract should be closed at the time of operation by a few Lemberts if too much time is not consumed and the patient's condition will permit of the search. Simple drainage without closure may be life sparing but usually a fistula results.

Drainage—I am averse to the use of gauze, unless it be as a cigarette drain, and then there must be a patent lumen in the center of the drain such as we would get in a rubber tube surrounded by gauze. No matter how gauze is used, unless it be changed every twenty-four or thirty-six hours, it soon acts as a plug or cork, rather than as capillary drainage. A unique devise of Dr. Heald's is a U-shaped glass tube with an opening in the bottom for the entrance of pus. This is threaded with a strand of gauze which can be pulled through, thus changing it as necessary without pain or inconvenience. I have never seen a rubber tube produce necrosis of the bowel by pressure. I drain at the site of the perforation and also in the pelvis, unless it is absolutely walled off from the pelvis. I think, when it is necessary, if we could drain the pelvis of a man as we can in a woman—through the vagina—it would lessen the mortality in men. Dr. Bevan has said, in the surgical clinics, that he tests the fluid in the pelvis with a pipet, and if it shows signs of purulency, he drains it and if not, I understand, he does not drain the pelvis. I would drain in all cases, except those absolutely walled off from the pelvis.

Dressings—For the first few days, the dressings should be moist and voluminous. The moist dressings facilitate the drainage. Dr. Crile uses large abdominal moist packs, just as we would in any infectious inflammation.

Position in Bed—Again quoting Dr. Bevan in the surgical clinics, he makes the statement that eighteen to twenty inches elevation of the head of the bed is sufficient.

We have demonstrated on the cadaver that unless the upright position of forty-five degree angle be maintained, there is an accumulation or reten-

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tion of fluid in the kidney pouches just above the kidneys. Therefore, we see that this position is maintained. I realize that bed elevation is somewhat more comfortable, but with Fowler Springs our patients do not complain. Van Buren Knott would keep these patients up even during operation.

Head of bed must be elevated thirty-one inches at least to even approach the 45 degree angle.

Salines—Another thing we have found to be of great value in lessening the toxicity and indicated wherever fluids are necessary is the substitution of tap water for normal saline in the proctoclysis. A little over three years ago we were having a hard time getting a case to retain salines, which has always been a common experience, and having often thought that water would absorb more readily, we decided to try it and were rewarded by better retention and absorption.

Now the law of osmosis is known to everyone, that of two solutions not isotonic, the one of lesser specific gravity will flow through a dead membrane to the one of greater specific gravity, providing they are under equal pressure.

In fluids per rectum, more must be taken into account, and the absorption of fluid is not explained wholly on the law of osmosis.

First, blood is a colloidal solution and the solution instilled, a crystalloid one, or pure water and the membrane a live one more or less semipermeable. Also blood is under a definite pressure, a different pressure than that of the fluid dripped into the rectum, so that the absorption can not be fully explained upon a simple application of the known laws of physical chemistry, however, clinically, I have found that tap water given by the same rules of proctoclysis is better borne, permitting us to give it over a greater length of time and hence in greater total quantities—we having been able to give two or three times as much if desired. I urge you to try it. If saline will go through why would not a fluid of less specific gravity do so more readily, providing it does not irritate the bowel to contraction, which it does not seem to do. In the highly specialized nasal and eye mucosa, water is more irritating than normal saline, but the sigmoid and rectum are intended to contain material as long as it does not distend them.

Quoting W. A. Bastedo, in a very carefully written article on The Treatment of Mucous Colitis, the author takes up, among other things, the treatment. In discussing lavage under treatment, he describes the use of an enema in these words "the liquid used should be rather hot, and I regularly employ tap water. Physiologic sodium

chlorid solution is not employed, because it makes the patient thirsty." In Journal A. M. A., 1919, I understand there was an article on the subject of use of tap water for instilling liquid and of mag. sulph. sol. where we wished to withdraw liquid from the system, however, I have been unable to locate it.

I understand Dr. Brassert of Calispell General Hospital, Montana, has used tap water for two years.

Gastric Lavage—If vomits occur repeatedly, stomach should be washed out and if necessary repeated every hour.

Acute dilatation of the stomach is very easily confused with, in fact is often present with parietic ileus. The distended epigastrium due to dilatation of stomach is confusing and will disappear on lavage, also relieving the intraabdominal pressure.

Medication—Bevan, in the majority of cases, withholds practically all medication, except in those cases with tendency to parietic ileus, in which he gives small doses of castor oil or saline laxative, followed by enemas. Crile hibernates his patients with morphine keeping respiration down as low as ten to protect the kinetic system, conserving the patient's energies and resources while local immunization is being established. Dr. Sahli of Australia, introduced what is known here as the Ochsner treatment. Dr. Ochsner followed out the Sahli treatment here in 1890, and I believe it is well applied as a post-operative treatment in these cases of peritonitis. If there is a parietic tendency, give less or no narcotics, just enough to keep the patient quiet thus conserving the patient's energy. I think we can draw a distinct line in peritonitis cases between those which, as Murphy told us, have a denuded and blistered peritoneum, the majority of which cases usually succumb to toxemia from rapid absorption, the protective endothelium having been destroyed on account of the virulency of the bacteria and, second, those of less virulent infection which still have intact glistening serosa.

Treatment of Beginning Parietic Ileus—(Not for the peritonitis.) There are two methods of treatment. First, no cathartics. Using enemas. Application of stupes. Lastly, enterostomy or ileocolostomy. These are often saved by spontaneous fecal fistula. Second: Small doses of laxative, such as oil or salts with strychnine, as recommended by Bevan, and enemas. To which treatment, I add physostigmin 1/60 of a grain every two to four hours; hypodermically given at the first sign of distention or even better, immediately after the operation, if there is distention

at the time and continued every three to four hours. It being easier to prevent than to cure. In New York Post-graduate, some of the surgeons are as a routine using physostigmine grain 1/60 every two to four hours in all laparotomys.

An article from the American Medical Journal, August, 1910, by W. C. Abbott says, physostigmine is the best remedy for flatulence due to intestinal torpor or paresis. It operates speedily and is quickly eliminated. The author administers minute doses every ten to thirty minutes until desired effect has been secured. He uses physostigmine for intestinal torpor, but must not be used in too large doses, and strychnine to incite nervous centers. Waugh in Southern Clinic of August, 1911, advises combining physostigmine with strychnine and berberine for parietic ileus. The action of this drug, as far as the intestines are concerned, is peripheral, and for the most part is that of rendering the terminations of the motor nerve, vagus, more irritable, and thus the impulses over vagus to intestine more effective. There are some authorities, however, that believe that physostigmine also acts as a true stimulus and may activate the intestines even after the motor nerve endings have been destroyed.

Pituitrin is a valuable addition to our armamentarium. Many give it at stated intervals. We are more often successful if, in our enema, we give it in 1 c.c. doses hypodermically ten minutes preceding the enema.

To treat parietic ileus rationally with drugs one must understand the innervation of intestinal tract and what has taken place. In general we can say that the vagus is the motor nerve of the intestines. Some authorities stating to the rectum, others only the colon. Be that as it may, our trouble involves primarily the small bowel and active peristalsis as such is greatest in the small bowel. The sympathetics or splanchnics are the inhibitors of peristalsis.

The bowel has some power of motion, automatic so to speak, independent of sympathetic and vagus attributed to nerve cells constituting plexus of Auerbach, is sometimes spoken of as parasympathetic, autonomic or vagal bypath. It is connected to central nervous system and runs along with the vagus. This complicated, little understood, autonomic system must be concerned in some of the apparently paradoxical actions of atropine on the intestinal tract which I will mention later.

For practical purposes we say, increased motility presupposes vagal irritation. Decreased motility, splanchnic irritation. The thickened trans-

verse muscular layer of ileum at the ileocecal junction constituting the ileocecal valve is under control of splanchnics and is under constant moderate tonic contraction through impulses of splanchnics.

Now, stimulation and irritation of these splanchnics from toxins as in peritonitis cause more firm contraction of the valve as well as inhibiting the movements of small bowel and the contents are prevented from passing into the cecum. All peristaltic sounds may cease so that in parietic ileus we have over activity of the sympathetics with unstriped muscle of bowel quieted, and contraction of the sphincters perhaps, of the pylorus, internal rectal sphincter as well as the ileocecal valve.

This splanchnic irritation producing inhibition of intestinal movements accounts for the quiet intestines during a laparotomy.

Now, anything we could get that would paralyze the inhibitory without depressing the vagus, or accelerator impulses, would be ideal and there are some authorities, and evidence to show, that atropine in massive doses does in some way produce bowel movements. (To-wit: Abbot says atropine in massive doses paralyzes inhibition.) The accepted theory is that normal doses of atropine do not affect the splanchnic or vagal path. It depresses only the intense peristaltic contractions, such as are seen after doses of physostigmine, pilocarpine, and pituitrin, by its action on the parasympathetic. In massive doses according to Magnus in Chusney's pharmacology, it causes an increase in peristalsis as shown by vomiting and purging and is explained by its action on the parasympathetic as this action disappears when this muscle is separated from Auerbach's plexus. It is stated in some pharmacologys that toxic doses paralyze motor nerve endings of the vagus, but Magnus states that it probably does not occur in the intact animal, while White and Wilcox make the statement that the splanchnics are depressed, thus cutting out the inhibition of the sympathetic and leaving the vagus unrestricted, that massive doses paralyze terminations of splanchnic nerves. In further confirmation, A. Lederer, in Medical Klenik, January, 1910, reported eight cases of parietic ileus (treated with massive doses of atropine) with improvement in ten hours, marked by abundant fecal discharge. Belladonna toxic phenomena occurred in two cases, but not alarming, and disappeared in twenty-four to forty-eight hours Schultz Mitt. A. D. Grenz geb Bd xii, November, 1907, Reports in His Use Atropine; has been successful up to the time of his article in producing a movement

of the bowels in 95 per cent of twenty cases of paralytic ileus.

As soon as condition is suspected, he injects $1/32$ grain. If no appreciable result, he repeats the injections systematically as soon as the patient has recovered sufficiently from the preceding injection.

But on the other hand I found reports where it was advocated and used successfully in spastic ileus or enterospasm, and this is rational and in keeping with our ideas as regards pharmacology of atropine. In the discussion it was brought out that one was a case of retroperitoneal tumor, by pressure, cutting out the sympathetic leaving the unrestricted vagus to produce spasm. Another class was vagatonia with enterospasm and intestinal obstruction. Toxic doses of atropine relieved with free evacuation. These discussions leave us undecided as regards atropine, but there is a place for its rational use and further work along that line is necessary.

Enterostomy is usually done late. It should be done early. The consent of the patient, and courage of your convictions enter into it, but if parietic ileus at time of operation should be done right then.

SUMMARY

1. That the use of tap water is more successful in proctoclysis than saline.

2. That we should maintain approximately a 45 degree angle in our Fowler position.

3. That prevention of parietic ileus may be accomplished more often: 1. The foregoing. 2. Physostigmine and pituitrin. 3. Repeated small doses of castor oil or salts followed by enemas.

4. In the light of reports and apparently conflicting theories, further investigation of the use of massive doses of atropine is necessary.

Discussion

Dr. Ralph E. Keyser, Marshalltown—I haven't anything new to offer in the discussion of this paper, and will only emphasize two or three of the important factors that I find in the treatment of these cases. In the first place, paralytic ileus caused by peritonitis, either local or general, is one of the most distressing conditions which a surgeon is called upon to treat. The best plan of treatment is prevention, if possible. The most important factor in the prevention of an ileus, with the exception of early diagnosis, is the proper installation of drainage at the time of the operation. I cannot make this point too emphatic—that the proper installation of drainage at the time of the operation is paramount in importance. I am speaking now of cases of diffuse peritonitis, not localized peritonitis. In all cases of diffuse peritonitis, after the point of infection has been

removed, the next important step is thorough pelvic drainage. To illustrate this one point—let us take a case of primary perforative appendicitis where the surgeon removes the appendix soon after the onset, and merely drains to the ileo-cecal fossa, when there has already been seepage of infective material into the pelvic cavity which has not been drained. That patient is going to have a stormy convalescence. In other words, he is going to have a hard time to get well. In fact, if he does get well, he will have to submit to a further operation for an abscess, and in the meantime he will have plenty of distention and paresis of the bowels, which is nature's method of walling off the infected area. Therefore, in the classification of cases of suppurative peritonitis, let us divide them into two distinct classes, because no time limit can divide them. Only the pathological changes that have taken place in the abdominal cavity can determine the type of case and the method of treatment. As the author of the paper has so nicely stated, those cases in which there has been a denuding, or blistering, of the peritoneum constitute the one class, while those in which there has been no denuding or blistering of the endothelial cells make up the other class. Treatment is different in those cases in which there has already been a denuding of the peritoneum, being diametrically opposite that indicated in the other class. In the type of cases wherein there has been no denuding or blistering of the endothelial cells of the peritoneum, a large percentage of the patients get well if treated properly, and the treatment is exactly as Dr. Pfeiffer has stated. After the case is operated and proper drainage has been established, the patient is placed in a position at 45 degrees and voluminous hot dressings are placed over the abdomen. In addition, proctoclysis is installed, and I agree with the author that in adults tap water is much better than saline solution. I use weak glucose solutions in children under ten years of age, but in adults I prefer tap water because they absorb it better and handle it nicely. In these cases, nothing is given per mouth until we are positive that drainage is taking care of all septic material in the abdominal cavity—no physics, nothing per mouth, the patient being maintained by means of proctoclysis by the drop method, one pint every two hours, given slowly. If the patient has considerable distention, every third or fourth pint can be given a little faster, say 120 drops every minute, the increased rate of proctoclysis stimulating peristalsis. When colored solutions begin to be expelled from the bowel in twenty-four to forty-eight hours this is a fine omen. Most of these patients get well. Concerning the type of peritonitis in which the peritoneum has been denuded, these cases are treated differently. Most of the patients die. If you have opportunity to employ any method of treatment, do an enterostomy early, because in these cases the paresis is marked, and, in my experience, most of the patients have died of sepsis plus toxemia from the intestinal tract.

Dr. Pfeiffer—I only want to add that in general suppurative peritonitis I have always considered the prognosis bad if I have serous drainage or scant instead of purulent drainage. I feel like giving a bad prognosis in those cases.

THE MAJOR INFECTIONS*

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The four major infections, syphilis, tuberculosis, cancer, and sepsis have many points in common. They are all introduced into the body through its surface, and, with the exception of carcinoma their causative agents are identifiable. That carcinoma is caused by a specific organism, there is much reason to doubt, but that it arises on the surface of the body and penetrates through the protective coverings to attack the non-epithelial constituent as well as the epithelial is assured. Bacteria, which Vaughan believes to be neither animal nor vegetable, but organisms lying between, and which are responsible for tuberculosis and sepsis, are more resistant than the body tissues of the host to poisonous agents, which would cause their destruction. One of the main reasons for believing that the spirochete may belong to the protozoal group rather than to the bacterial lies in the fact that it is like all the protozoa, for example the plasmodium of malaria, responsive to specific medication without injury to its host.

These four infections have another and very important feature in common. They not only work directly on the tissues, but they infect the lymphatics. As Cohnheim pointed out more than forty years ago, if the sentinel gland, that is, the one first involved, can be located, the origin of the disease in the external defensive mechanism can be ascertained. When the causative noxious agents enter the blood-stream they may be carried to situations where the defensive powers of the animal organism may completely overcome them. While this is equally true of the lymphatics, the defensive process is much slower and the lymphatic glands themselves often become involved and act as secondary sources of infection. Whether the infection is picked up by the blood-stream or by the lymphatics is largely determined by physical factors. The blood capillaries pick up watery molecular solutions to which their walls are permeable, but the colloid particles are too large to pass through the walls of the capillaries, and are carried into the lymphatics through

the agency of the endothelial cells, which become phagocytes.

The lymphatics undertake the removal and the destruction of particles too large to penetrate the walls of the capillaries. For instance, on the under surface of the diaphragm particles of carmine, microscopically visible, have been seen to enter the lymphatics and pass to the thoracic glands. The resistance developed by the lymphatics varies in different persons and with different forms of infection. The process is accompanied by increased vascularization, phagocytosis, and the development of connective tissue which contracts until it cuts off the nutrition of the contained organisms. The latent phase of these contained organisms, especially spirochetes, the bacilli of tuberculosis, and the cancer cell, may be prolonged, resulting in renewed activity after many years, due to a breaking down of the lymphatic barriers from injury or intercurrent disease.

The reactions of the four infections, one on another, when in combination, which occurs not infrequently, are disastrous. The syphilitic patient may die from terminal tuberculosis. The leukoplakia buccalis of syphilitic origin leads to chronic septic irritation in which may develop carcinoma. Sepsis is a common and unfortunate secondary infection in syphilis, tuberculosis, and cancer, causing great distress to the patient and shortening of life. Sepsis is also a factor in the visibility of the manifestations of tuberculosis, cancer, and especially syphilis. Persons of cleanly habits may have little or none of the hardness in the base of the chancre which is due to sepsis, and the secondary manifestations of syphilis in the clean may be extremely mild. The unclean are more likely to have prominent display of primary and secondary syphilitic lesions, according to Corner, with consequent early diagnosis, and the advantage of early treatment lies with them. Patients with tuberculosis seldom die from the disease itself, except in the presence of meningitis when the inflammatory products of the specific infection are under pressure. The large majority of tuberculous patients die from the associated sepsis. In carcinoma of the internal organs the course of the disease may run with little or no pain because of the absence of sepsis, in marked contrast with the open septic conditions of external cancers, which explains the common conception of the laity that death from cancer means being eaten alive.

The question of immunity to the four plagues is an interesting speculation, of which we have no proof. In the sense of the actual causative

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agents of these plagues passing from mother to child, the spirochete only can pass through the placenta, but it would appear that certain persons have inherited or acquired more than average resistance to the causes of tuberculosis, carcinoma, or sepsis, or in some way present unfavorable conditions to the harboring or growth of the various infections.

Syphilis—"Unto the second and third generations;" how true is this old prophecy. Because of syphilis the innocent are born into a harassed life of inferiority. Hale White, in his statistical table of the death rate in syphilitic subjects who had had two years of treatment, showed it to be nearly twice the normal in various periods after the first five years. The usual estimate of the incidence of syphilis in European cities is from 12 to 14 per cent of the adult population. These, however, are pre-Wassermann statistics. The sensitive modern tests record incidence in European cities as high as 20 per cent. In the cities of the United States, Stokes estimates the general incidence as about 10 per cent.

The effect of sepsis on syphilis is most disastrous. Stokes confirms the observation of Duke as to the extraordinary improvement in cases of stubborn visceral and neurosyphilis, which may sometimes be secured by removal of all sources of focal infection. Stokes emphasizes the fact that the combined effect of inflammatory and degenerative changes may cause the diagnostician to overestimate the permanent damage, which can be seen only after the inflammatory complication subsides.

Recent knowledge of syphilis has unsettled, more or less, the opinions of the past generations which were based chiefly on clinical observation. It is probable that the present-day note of uncertainty is due in a great degree to the results of experimental research, largely on rabbits, and the occasional failure to arrest advanced syphilis, especially of the nervous system. Arrest of the disease in the nervous system may be hoped for, but the expectation of restoration of lost nerve tissue, merely because the defects are invisible, is no more reasonable than when there is visible loss of the integrity of external parts of the body. It is fairly certain that syphilis of the nervous system in a recognizable form is a late manifestation of an early nerve infection. Those patients who early show external manifestations of syphilis in the shape of well marked secondaries in the skin, mucous membrane, bones, and soft parts present a more curable form, or at least are less liable to syphilitic attack on the nervous system, even as a late manifestation; perhaps the disease in the

visible parts of the body leads to earlier diagnosis and treatment. It is possible, or even probable, that there is a certain specificity in strains of spirochetes which causes attack in one case on the nervous system, and in another, results in effect on the external portions of the body. The work of Rosenow on specificity of bacteria leads us to believe that this is true. On the other hand, in the location and progress of syphilis the individual soil may be different and the spirochetes, the same. Negroes seldom develop syphilis of the nervous system, but suffer to a far greater extent from its vascular manifestations, such as in the heart, aortic aneurism, and so forth, than the white race. In the negro, when the nervous system is involved, the condition is usually due to the paralytic effects of cerebral thromboses, rupture of miliary aneurisms, and secondary embolisms, rather than to primary neurosyphilis.

Our sheet anchor of diagnosis has been the more or less fallible blood Wassermann reaction. The blood Wassermann reaction in the secondary stage of syphilis is manifest in nearly 100 per cent of cases; in late syphilis of the viscera, bones, skin, and so forth, it is more than 80 per cent, and in syphilis of the nervous system it is about 50 per cent. Spinal puncture gives a higher average of successes than the blood Wassermann test. The nervous system has no lymphatics and the nerve cells are insulated by the neuroglia, so that the spirochete may remain latent here indefinitely, defying diagnosis, and protected against remedies.

It is probable that there are in the body certain other tissues in which the spirochetes may remain latent indefinitely without manifestations, such as the heart in congenital syphilis, and the testes, spleen, and lymph-nodes in acquired syphilis. The enlarged lymph-nodes may restrain the advance of the spirochetes, and so encapsulate them as to prevent evidence of their presence indefinitely. Incidentally, the lymph-nodes may protect the spirochetes against medication, permitting reinfection of the patient from time to time, as would any other form of focal infection, quite parallel to the granular manifestations of tuberculosis and cancer. In certain cases of intractable syphilis with splenomegalia, in which anemia is a prominent symptom, prolonged treatment sometimes fails to arrest the disease. Its progress is quickly arrested and the anemia promptly overcome by removal of the greatly enlarged spleen in which spirochetes will be found.

It may be possible that a similar condition exists in the deeper layers of the skin, where general medication of syphilis occasionally fails to arrest the disease. In such cases disappearance

of the visible manifestations sometimes follows the inunction of mercury which possibly acts more directly on the disease than other forms of treatment.

The arsenic compounds are of great value, not only as curative agents, but also as public health agents, within six hours rendering carriers of the disease in a contagious form, such as chancres and mucous patches, temporarily incapable of infecting others. Occasionally, however, a serious reaction on the liver, with jaundice, results from the use of arsphenamin. Perhaps arsenic treatment is being overdone, especially in elderly patients who are less resistant to chemical poisons than younger patients. Admitting that the arsenic used in the chemical sense has been changed in arsphenamin, arsenic in various forms has been up and down in the treatment of syphilis a number of times in the history of the disease, but mercury has steadily maintained its place.

Stokes says, "Early syphilis can be arrested in a high percentage of cases, and the majority of patients if well treated, can be said to be cured. Late syphilis, outside the nervous system, can be arrested in the great majority of cases. Neurosyphilis can be arrested perhaps in from 50 to 60 per cent of cases, and the condition of the patient greatly improved in from 80 to 85 per cent." While the percentage of syphilis is high, the number of patients who sustain irremediable damage is relatively small, which indicates either a high grade of natural resistance and hereditary or acquired immunity, or that treatment is more effective than is often believed. As I recall patients with undoubted syphilis whom I saw in my earlier practice and whom I have had opportunity to observe during life, it seems to me that there is a fair percentage of them alive and apparently well, and with healthy children. Mothers who are possibly less seriously affected with the disease may give birth to a syphilitic child; a mother may have still-births, abortions, and so forth, and yet develop an immunity and have healthy children who remain well, and she may also regain her health.

One rather discouraging feature of the present unsettled state of knowledge of the diagnosis of syphilis is the frequency with which cancer is still more or less justifiably subjected to diagnostic delay because of the failure rapidly to eliminate the question of syphilis, and it is certainly true that the bugbear of syphilis is responsible for the hopeless state in which some of these patients come to the surgeon. In urgent surgical conditions such as cancer, and in acute abdominal conditions, a necessary operation should not be unduly

delayed for treatment of chronic syphilis. The syphilographer is sometimes too suspicious, and the practitioner generally too innocent. The surgeon can aid the syphilographer in the treatment of the disease by the removal of foci of latent spirochetal infection as it exists in the spleen, glands, and other tissues, and in the removal of septic foci which break down the general resistance of the patient.

Tuberculosis—The septic factor is the most important in tuberculosis. Tuberculosis itself seldom kills unless the products of the tuberculous infection are confined in a bony box and produce injurious pressure, as in the brain. Other parts of the body, the thorax, peritoneal cavity, and the soft parts generally, yield to pressure, which gives time for the development of local resistance and generalized immunity. The greater number of patients with tuberculosis die from intercurrent disease in which sepsis plays the chief role. The Ancients recognized that opening a so-called "cold abscess" would be followed by hectic, picket-fence temperature, prolonged discharge, and eventually by the death of the patient. They recognized nature's ability to open such an abscess without the development of these symptoms, although they failed, as we fail now, to imitate the same safe drainage mechanism. Too often, physicians introduce probes into spontaneous sinuses following cold abscess and cause deep infection and everlasting damage. So important is the septic factor in tuberculosis that the main consideration in any operation for the disease is to avoid mixed infection. In certain situations surgical tuberculosis may be a mixed infection from the start, as occurs in the intestine. The most common type is that due to swallowed sputum which causes multiple ulcerous lesions which, in time, often result in intercommunicating fistulas involving the small and large intestines, and run on to a fatal issue, but occasionally the ulcerous tuberculous process may be limited to a small intestinal area, and partial healing with obstruction takes place. Such patients are cured of the local lesion by resection, and the improvement in their general condition is very great. The septic factor in these cases is the deciding one in the eventual result.

In contradistinction to the ulcerating type of intestinal tuberculosis is the so-called hyperplastic tuberculosis, usually the result of bovine tuberculosis bacilli, which usually involves the ileocecal coil, especially the cecum and ascending colon, although it is seen occasionally in other parts of the large intestine and even the small bowel. In this localized and most curable form, a tumor de-

velops which so closely resembles malignant disease that the surgeon on resecting it cannot always rule out carcinoma until microscopic examination has been made. The severe anemia in these cases, as in malignant disease of the head of the colon, is out of proportion to the extent of disease and may lead the inexperienced to look on the case as incurable. Tuberculosis of the peritoneum is an interesting surgical condition.

The ascitic forms are most common in women and in them usually originate in tuberculosis of the mucous membrane of the fallopian tubes which are lined with ciliated epithelium, having on cross section, much the appearance of bronchi of the same size. The tuberculous peritonitis is the result of the escape of tuberculous material through the open fimbriated extremity of the tube into the peritoneal cavity, and the peritonitis is a conservative process of nature in an attempt to destroy the infecting material. The fallopian tube in tuberculosis is usually open, in contrast with the closed tube in gonorrhea. The reasons for failure to cure tuberculosis of the peritoneum in the majority of cases by merely emptying out the fluid can readily be seen. If the abdomen is opened the results are better, although still unsatisfactory, because the fluid is removed more thoroughly, not because sunlight and air are admitted into the peritoneal cavity. Complete removal of the fluid in many cases permits the fimbriated end of the fallopian tube to become adherent to the sigmoid or neighboring peritoneum so that the products are retained within the tube. The ascites disappears as the necessity for a peritoneal defense passes away, but the products accumulate in the tube and become manifest on pelvic examination. Removal of these tubes can be effected readily by enucleation, often without a ligature, with cure of the disease in a high percentage of cases. It is not necessary to remove the ovaries as they have only a surface infection similar to that of the intestine. The cause of tuberculous infection of the peritoneum, especially in children, is sometimes to be found in infected lymph-nodes. The so-called adhesive type of peritonitis, more common in the male, is a very favorable form. The abdomen becomes hard, fibrous exudate forms, and spontaneous recovery usually takes place. Operation should not be performed, since it merely opens up adherent spaces in the peritoneal cavity and sometimes leads to intestinal injury and fecal fistula. This type argues for a mixed infection from a septic source of origin, usually the intestine, and sepsis causes the plastic peritonitis. Because the complicating septic bacteria which produce the plastic exudate are short

lived, the exudate will be found sterile. I have had a few cases in which early operation for the evacuation of localized pockets of septic material revealed short-lived types of pus-forming organisms which later would have disappeared through natural defense.

It is very important not to institute wound drainage following the removal of a tuberculous kidney. Unless there is distention of the ureter from stricture near the bladder, which would necessitate its removal with the kidney, the ureter should be handled very gently, catching it with a clamp at a point about 5 cm. below the kidney with its sheath, surrounding fat, and adherent tissues, cutting with the cautery, and dropping back into position without tying. A ligature placed in so vulnerable a situation is likely to be followed by a sinus which will be slow to heal. The tuberculous ureter should be removed completely or its upper stump left sufficiently long so that if infection follows, drainage will be direct. Tuberculosis of the glands, joints, bones, and intestines, is much less common than formerly. The majority of such cases are bovine in origin and the incidence has been greatly reduced through the pasteurization of milk and the better care of dairy herds.

Cancer—Glandular involvement in cancer tells the story. While operative skill and technic are important, generally speaking our results show that without regard to the type of operation, five-year cures occur in 71 per cent of cases in which operation has been performed for carcinoma when the glands are not involved, and in only 19 per cent when they are involved. Local operations cure local disease; massive operations fail when the local stage has passed. Operative mortality in cancer is not as important as extension of operability which gives a larger number of patients a chance for cure. For cancer of the gastro-intestinal tract, which means, practically, the stomach, large intestine, and rectum, a 10 per cent mortality following operation is a fair risk and justifies the procedure. When I find my personal results as to mortality better than 10 per cent, I extend the operability, taking more advanced cases. Enlarged glands may be due to associated sepsis and not to cancer, and incorrect diagnosis may lead to failure to remove a curable growth. Methods of handling these cases, such as the two-stage operation of Mikulicz for carcinoma of the sigmoid, and preliminary colostomies, for cancer of the rectum, lessen the septic factor and are of the greatest value in extending operability and reducing mortality.

The associated sepsis in cancer is the cause of

much of the distress and hurries the patient to a fatal end. In the Middlesex Cancer Hospital, by establishing strict asepsis and antisepsis, cachexia, which is a combination of anemia and sepsis, has been greatly lessened. The patients are made more comfortable and their lives prolonged. We all recognize the dangers of operating on the infected, so-called inflammatory carcinomas such as are seen around the mouth, the cervix, and so forth. The use of the knife in these cases is often followed by quick recurrence and metastasis from infected venous thrombi. Cautery excision in these cases, followed later by plastic repair, is a step in the right direction. The cancer cell is five times as vulnerable as the normal cell and is especially susceptible to heat. The cautery procedure should not be abandoned, particularly in infected cancerous processes around the mouth and jaws. In many cases of infected cancer, radium and the roentgen ray are now used and they have a similar effect without the risks of the tissue destruction and sloughing which accompanied the use of the cautery, to say nothing of the pain. Experience with irradiation has demonstrated a number of points. First, that if there is actual tissue loss by the involvement in carcinoma, while the disease may be eradicated by irradiation, the tissues are not restored. Radium is destructive and may be more so than operation. In the alimentary tract, huge fibrous strictures follow the use of radium, and secondary operation for the relief of these strictures is seldom as successful as if the patient had been operated on primarily. It should be remembered, too, that the handling of radium, especially in malignant disease, requires an expert. There are many men who, with a small amount of radium, do little good and an enormous amount of harm. With good faith, but poor judgment they apply radium in cases in which operation should have been performed early, causing delay and perhaps failure in a subsequent operation which, primarily, would have been successful. Patients who come to surgical operation, subsequent to the use of radium, have a greatly increased operative mortality and greatly reduced prospects of permanent cure. Generally speaking, the use of radium means the parting of the ways. If radium is elected one can seldom turn back and take the operative route with a good prospect of success. In certain situations of the body where the tissues can be easily removed this does not hold true, and in special cases the preliminary use of radium to be followed by operation, as quickly as the inflammatory condition from the radium subsides, may be advisable. However, the physician with little ex-

perience who, without surgical consultation, uses radium on the operable patient is not giving the patient a fair chance. The use of radium or the roentgen ray following operation has much to commend it in certain types of cases. The more cellular the growth the less the prospect of surgical operation, and the greater the prospect of benefit from radium and roentgen ray. In the hands of the wise expert these agents have an enormous field of usefulness. In cases of inoperable cancer of the cervix uteri in which the vaginal wall is involved and the uterus fixed, radium often causes the disease to disappear painlessly; some of our patients have remained well for a term of years. Radium not only destroys the cancer cell and sterilizes cell nuclei at a greater distance, but it also reduces the sepsis. Because the ill-advised use of radium has done harm, let us not deny its extraordinary power for good when properly employed. Desjardins has demonstrated that irradiation by modern roentgen ray methods in the hands of the expert, is proving of great value and promises much in the immediate future.

Sepsis—With the discovery of the causative bacterial agents in sepsis, there was an abandonment of all the knowledge which had come through clinical experience. I well remember as a student how the then new antiseptic school of surgery laughed at the "laudable pus" of the Ancients, and yet we now recognize that there is such a thing as laudable pus, and that the Ancients were right. We have failed utterly to destroy pathologic bacteria by agents which are not harmful to the human economy. We know that what happens in the favorable case of sepsis is the development of an immunity through natural processes, an increase of the bodily defenses and an attenuation of the bacteria until the resulting exudate may have the physical features of pus, but is no longer infective to the organism. This process was spoken of by the Ancients as the abscess getting "ripe," that is, ready for opening. Much harm has been done by knifing an abscess, prematurely breaking down nature's carefully built defense, delaying the process of healing, and by the introduction of new and more virulent bacteria from the outside, reinforcing those that are undergoing deterioration from natural processes on the inside. The Ancients understood that the time to open an abscess was when it was "ripe and pointing," or when it was coming to the surface by way of a protected passage and development of a soft spot. Today it is often good practice in treating abscesses which are not under pressure to wait for them to become ripe and point. Many

times it is wiser to let the abscess open spontaneously, certainly not to squeeze or force the pus out, thus breaking down the protection wall and opening up new avenues of infection. One can illustrate this best by our changing views of the handling of acute perforating appendicitis with spreading peritonitis.

Sistrunk has developed the fact that in the cases of acute appendicitis for which operations have been performed in the Clinic, there have been no deaths other than accidental if the appendix has been removed in the first twelve hours. In the second twelve hours the death rate from peritonitis following the rupture of an acutely infected appendix has been 3 per cent; in the third twelve hours 6 per cent, and between the end of the thirty-six hours and the sixth day, 16 per cent. In the ordinary types of acute and subacute appendicitis in which there is no escape of septic contents through a perforation into the peritoneal cavity, the appendix can be removed safely at any time. During the first few hours after such septic material escapes it remains in the vicinity of the appendix. After the first shock of the insult to the peritoneum the patient may be relieved of pain and appear much better, the period of the "fatal improvement" of Morison, since in spite of the fact that muscular rigidity continues, the unwary practitioner may thereby be led to postpone operation.

Removal of the perforated appendix after the process of spreading septic peritonitis has been established, more often does harm than good. It does not cure the peritonitis and it may break down nature's resistance in such a way that a patient dies who might otherwise have reached a stage of operative safety. It will be said that immediate appendectomy at any stage, regardless of peritonitis, would save many of these patients who, without operation, would die. Perhaps in the exceptional case this may be true, but every cemetery has its gravestones which emphasizes the rule. The surgeon of good judgment will recognize the exceptions to the rule of caution in the dangerous intermediary stage between the safe early and the safe late operation.

I have spoken of perforative appendicitis in terms of hours and days. It is a poor method of evaluating all the conditions which surround the perforated appendix, but perhaps it is as good as another, although the question really is one of the state of the septic process rather than of time. When this method of computing the pathologic condition is used, it is based definitely on the time that the perforation occurs and not on when the patient is first seen by the surgeon.

Intestinal peristalsis is the agent which spreads the infection from the region of the appendix throughout the peritoneal cavity. Alonzo Clark improved results in his time by giving opium, which quieted peristalsis. Ochsner showed a better way to check peristalsis by stopping food. Since it is known that the fluids of the body and the necessary nutrition may be readily maintained by subcutaneous administration of 3 per cent glucose in sodium chlorid solution, in a serious case of progressive peritonitis it is best not to use even proctoclysis at first, because occasionally the solution will pass through a patent ileocecal orifice and start peristalsis in the small intestine.

Mann, in his classic experiments, removed the liver of a dog and found that in about eleven hours the animal passed suddenly into collapse and died within a few minutes. He discovered that if he injected glucose solution into the veins when this terminal stage had been reached the dog would jump up, wag his tail, and appear quite happy, and could be carried on in this way for a considerable period. This brings up the point that after all surgical operations which involve the integrity of the gastrointestinal tract, or in which there is danger of distributing sepsis by peristalsis, the early giving of fluids and especially food in the stomach is to be deprecated. The administration of normal salt solution or specially sterilized glucose in sodium chlorid solution subcutaneously affords a substitute which in the sensitive patient, by following Bartlett's method of adding a small amount of novocain, can be used painlessly. Hot fomentations applied to the entire abdomen and sufficient opium to relieve pain are of some value while the peritonitis is active.

After the peritonitis has subsided and the process has become localized, usually about the sixth or seventh day, the abscess may be opened, and if it is ripe, that is, if the infection has led to the development of general and localized immunity, the appendix can be removed with safety. If the patient is still very ill and the products more or less imperfectly encapsulated, under local anesthesia a small opening is made down into the accumulation through which a little piece of rubber tissue is introduced to evacuate slowly the septic products and relieve the tension.

Eight or ten days after the inception of an acute appendicitis, operations other than the evacuation of an abscess for the removal of a well encapsulated septic appendix which is progressing toward recovery, must be performed with caution. The plastic adhesions which develop as a result of the pathologic process have become vascularized and have developed lymphatics. Ap-

pendectomy at this time sometimes results in intestinal fistula or generalized sepsis.

Finally, I would call attention to the rectal opening of the pelvic appendiceal abscess. A patient is sometimes seen who is very ill with an indefinite tumefaction in the lower abdomen covered by intestines. Rectal examination shows a mass in the pelvis impinging on the rectal wall. If the abdominal tumefaction is watched it is seen to disappear, gradually sinking into the pelvis. The patient shows evidences of a localizing infection with a tumor pressing on the anterior rectal wall, which gradually increases in size, and rectal tenesmus becomes prominent. At the end of about two weeks the anus will be found dilated with considerable escape of clear odorless mucus, the tumefaction nearly filling the rectal space, pressing down against the peritoneum. On about the eighteenth day, the mass presenting in the rectum feels much like the stage of labor in which the child's head and the membranes are pressed against the cervix, represented by the anal muscles. The patient develops a peculiar nervous condition, shortly after which there is a sudden escape of an enormous amount of pus of foul character, with almost immediate relief to the patient.

I have watched many such cases, and in the earlier days I opened some of these abscesses through the anterior rectal wall. Most of the patients did well, but in some cases I failed to drain the abscess at the proper point. The drainage tube would become displaced, or fail to drain, requiring painful dressings. Sometimes I was able to delay the recovery of the patient for several weeks until the abscess finally opened itself at a place of its own choosing. I have seen cases of this kind in which the abscess was opened through the rectum, altogether too early, before the intestinal roof was firm, and evacuation of contents was followed by displacement of a loop of small intestine into the cavity from which the pus had been evacuated, resulting in death. I have never had a patient die if I allowed the abscess to go on to spontaneous opening.



EARLY AND LATE LESIONS DUE TO ELECTRIC INJURIES*

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The science of medicine is so closely linked with the problems of every-day living that any radical change in community life always brings a corresponding medical problem. Three-quarters of a century ago the physician practicing in the new state of Iowa had to cope with the pioneers' problems: the covering of long distances on horseback, the lack of adequate medical and surgical supplies, the care of the diseases and injuries incident to clearing the land and founding a homestead in the wilderness. Today our public health problems are those of congestion rather than of isolation; our injury cases are for the most part incident to rapid transit and to industrial development; and criss-crossing the state. Penetrating to a large percentage of Iowa homes is a network of electric and telephone lines, carriers or potential carriers of a high tension current, bringing very close to each of us the problem of the treatment of electric burns and electric injuries.

I have spoken of electric burns and of electric injuries advisedly, for while they are often associated, either may occur independently of the other. Where the contact is instantly established without the formation of a spark gap, electric injuries may result without burns and without the peculiar skin changes characteristic of so many electric injuries. But where the formation of a spark gap precedes contact, or where a spark gap is later formed by attempts at breaking the contact, electric burns occur. Both these burns and the true electric injuries have much that is characteristic, and, therefore, of particular interest to the physician.

Except in rare instances, the physician does not see the victim of an electrical injury until sometime after the accident, yet in many, yes, in most cases, the question of life or death is decided in the moments immediately following the accident. If, then, the men who fall victim to our modern Juggernaut of progress are to be saved, we must teach the general public, particularly those workers who daily work with electricity, what to do and what not to do in case of accident. The emergency treatment to be given in such cases may be summed up in a new decalogue:

1. Contact should be immediately broken, the rescuer first assuring himself of his own safety.

*Read before the Austin Flint-Cedar Valley Medical Society, New Hampton, Iowa, July 11, 1922.

2. Emergency treatment must be begun at once; this means that the injured must not be left alone while a physician is sought.

3. The victim should be laid flat on his back, all clothing loosened, the chest exposed.

4. The head should be slightly raised, never lowered.

5. If the injured is not breathing, artificial respiration should be instituted without delay.

6. In the presence of an assistant, artificial respiration may be supplemented by attempts to restore the heart action by rapid, rhythmic blows of the fist over the heart, or by friction over the heart, using hot and cold cloths alternately.

7. The presence of fractures may necessitate a modification of the usual technic for artificial respiration, but are not a contra-indication for its use.

8. No attempt should be made to give stimulants by mouth.

9. A close watch should be kept for the resumption of natural breathing. With the return of consciousness the patient may assume a half reclining position and may receive stimulants by mouth, but the close watch over him should not be relaxed.

10. All lesser injuries should be completely ignored, treatment being postponed until the general symptoms have subsided. The treatment of grave hemorrhage should be the only exception to this rule.

Even in the matter of breaking contact, obviously the first measure to be undertaken, fatal mistakes are made, sometimes even by electrical workers. The rescuer, in his eagerness to save his comrade, may forget to insure his own safety, or, realizing his own danger, may permit a fatal delay. Where the current can be instantly shut off, as in accidents within the power house, or insulated pliers are at hand for cutting the wire, the right course is obvious, but in many cases the rescuer must exercise greater ingenuity. He may insulate his hands with rubber gloves or, in their absence, by a dry cloth, for instance, the sleeves of his coat. If he can then stand upon a dry board, free from nails, or even upon a chair, rescue may be attempted. The wire may be broken or pushed away by means of a dry club or board, or the victim may be freed by shoving a dry board or even a dry cloth between him and the ground. Sometimes the victim can jump up enough to permit something to be shoved under his feet, often he must be raised. It must not be forgotten that the rescuer requires the same insulation in touching the victim as in touching the wire; his hands should be covered with rubber

gloves or with dry cloth, and he should take hold of the covered parts of the body and not the bare skin.

Once the victim is released, a fatal error is commonly made. His rescuer rushes away in search of medical aid, and before such aid is obtained, the crucial moments of grace have run out—crudely applied artificial respiration during the first few minutes is worth hours of the most expert attention later on. First aid should be given at once by whoever happens to be present, and it should be given on the spot. Transportation to a hospital or to the home is permissible only when conveyance and assistants permit of such removal without an instant's interruption of the attempts at resuscitation.

In the common, or garden variety of fainting spell, attributable to anemia of the brain, it is customary to lay the unconscious person on his back with his head somewhat lower than the body. In the unconsciousness following an electric shock, there is an engorgement of the vessels of the brain. The victim should be placed on his back with the head slightly raised. Usually a rolled-up coat will prove the handiest pillow. Before instituting artificial respiration, the mouth, throat and nasal passages must be hastily examined to make sure that there is no danger of aspirating some foreign substance into the lungs—plugs of mucus, artificial teeth, gum, and chewing tobacco are all potential dangers. The novice must be warned against violence in carrying out artificial respiration—rupture of the liver, the expulsion and later aspiration of the stomach contents must be guarded against. The lone rescuer, too, must husband his strength, for artificial respiration must be continued indefinitely—for hours, or until natural breathing is resumed. Alternating the method of inducing respiration brings some relief to the worker.

In the presence of one or more assistants, and only then, artificial respiration may be supplemented by other attempts at resuscitation. The heart may be stimulated by rhythmic beating with the fist over the precordium. Or friction of the same region may be used, using alternately hot and cold cloths. Friction may be applied to the soles of the feet. The chest and abdomen may be dashed with cold and with warm water alternately. A cold enema may be given. If available, a faradic current may be used to stimulate the neck and heart region. Camphorated oil or adrenalin may be given subcutaneously or intravenously. Venesection is said to have been effective in some cases; if it is done, artificial respiration must be temporarily suspended because

of the danger of air embolism. The rise in blood-pressure may also be combatted by combining chloroform inhalation with the artificial respiration. In the post-mortem examination of a victim of electric shock, the cerebrospinal fluid was found to be under great pressure so that spinal puncture might also be worth a trial, as a harmless measure of possible value.

The old adage that "a little learning is a dangerous thing" is graphically illustrated in the first aid treatment given by the average volunteer rescuer. Artificial respiration is neglected while he attempts to drown the victim by pouring stimulants down his throat, and applies his well beloved bandages to minor injuries. His happy belief in his efficiency is complete if there is iodine or salve at hand to complicate the bandaging process. In electric injuries such attempts are particularly unfortunate. Nothing should interrupt artificial respiration until natural breathing has been resumed. With the return of consciousness, the patient may be given stimulants and allowed to assume a half-reclining position, but eternal vigilance is still the watchword. Treatment of all local injuries should be postponed until this time. Grave hemorrhage should be the only exception to this rule.

Electric burns receive the same treatment as do other burns. Healing is usually uncomplicated, recovery relatively rapid, and the resulting scars small and less troublesome than would be anticipated from the extent and severity of the original burn.

In addition to true burns, there are often other extensive skin lesions, the typical electrical injuries or current marks. In the injured area, the skin is raised, is grayish yellow in color, and at one point there is a sharp depression. Jellinek attributes these lesions to the production of Joule's heat by the passage of the current through the relatively resistant skin. Sometimes, too, the skin is severely discolored, the pigmentation resulting from the deposit of minute metal particles from some metal which has been vaporized by electricity. Such skin is hard and dry, and the patient has the sensation of a foreign body in the skin, but here as in the typical electric injuries there is absolutely no pain. The skin which has been, so to speak, electro-plated, later peels off, and is replaced by normal skin. In typical electric injuries, or current marks, the ultimate loss of substance is often far greater than would be anticipated from the appearance of the skin soon after the injury. The skin is shed for some distance about the original mark, and there may be an extensive slough at the site of the latter, yet

the lesions are not at all painful. Granulation is particularly luxuriant in such wounds, and even deep lesions heal in readily. The resultant scars are relatively small, and show no tendency to contract.

Electric injuries do the greatest damage within the body to nerves and blood-vessels. Sometimes the skin lesions are a very imperfect index to the damage done, gangrene of an extremity developing only after some days. Yet even such cases are no exception to the general rule of painlessness, and of uncomplicated healing. Amputation should not be hurriedly performed, but should be postponed until there is a very definite line of demarkation. Such a delay involves no danger, and often makes possible conservation of much tissue which would be sacrificed at an early operation.

The selective action of electricity upon blood-vessels results in dangerous or even fatal late hemorrhage in an occasional patient, the hemorrhage developing after many hours or even after many days. The damage to the vessel walls in such cases is apparently often not confined to the one small area, and ligation of the bleeding vessel may be followed by renewed hemorrhage from above the ligature. The source of the bleeding must be definitely determined, the vessel isolated and ligated well up in normal tissue.

The late effects of electrical injuries are largely confined to the nervous system. The acute nervous symptoms, loss of consciousness, respiratory and cardiac disturbances, tonic spasms or loss of muscle control, are usually transient, and after the passage of a few days or even a few hours, the patient appears surprisingly well, often with nothing more than slight burns or current marks to show for his harrowing experience. Again headache, loss of hearing, great sensitiveness to sound, light and cold may be complained of during the first days, and epileptiform attacks, associated with incontinence of rectum and bladder and even with biting of the tongue may persist for a time. Yet the prognosis in all such cases is good, both as to recovery and as to freedom from late complications.

Since there is often something spectacular about an electric injury, and the dramatic element is further intensified by the mystery which is associated with electricity in the average mind, it is to be anticipated that accident or compensation neuroses will develop in a certain percentage of these patients. In such cases, it is the simple fact of the accident coupled with the predisposition of the patient, and not the specific nature of the injury that determines the development of a

neurosis, so that functional and compensation neuroses need not concern us here.

On the other hand, a variety of organic nervous lesions have been attributed to the late result of electric injuries: epileptiform attacks, mental confusion with delusions of persecution, multiple sclerosis, brain lesions suggestive of progressive paralysis, paralysis of certain muscles or muscle groups, often associated with sensory changes, chronic atrophic, ankylosing arthritis with changes in the bones, and many others have been reported. In a large percentage of these cases, recovery or marked improvement eventually occurs. In some cases, the pathological process may have antedated the accident, or may have subsequently developed quite independently of it, but the gravity of the electric accident makes it a likely scapegoat. In the occasional case, perhaps because of some associated pathology, the lesion runs a chronic course, and the time and manner of its development seems to point to the electric accident as at least the immediate cause. Many writers attach particular importance to the existence of lues in such cases.

Such late lesions following an electric injury are particularly difficult of diagnosis since no subjective evidence of injury may be present, and the lesion itself is in no wise specific. A particularly interesting case of this sort recently came under my observation. A boy of seventeen, serving as night elevator operator, "blew a fuse," and on going to the basement to replace it, received a shock. Of the manner of the accident he could make no definite statement; the shock, he said, had thrown him across the elevator shaft, but he had been able to resume his work immediately, and had made only casual mention of his mishap to his superior. The line was said to carry a current of only 220 volts, and neither the operator nor his superior attached any importance to the accident. The boy slept well the following day, worked as usual the next night, and again slept well, but on his way to work the second night, he noticed that his arm had "gone to sleep," as he expressed it. The paralysis was at first only partial, but when he came under my observation a year and a half after the injury, he had a complete right wrist drop, and the muscle of the right forearm were markedly atrophied. The sensory nerves were intact, the clinical picture being essentially that of a paralysis following anterior poliomyelitis. In the absence of any history of fever or of malaise preceding the development of the paralysis, the close temporal relationship between electric shock and developing paralysis must be considered convincing. The

low voltage cannot be considered a serious argument against this theory of etiology since an accident may transform a low tension to a high tension line at any time and there is, moreover, no fixed danger line in measuring electric current. Not only may a number of apparently insignificant external factors, markedly influence the action of a given current on the body, but there are apparently extreme variations in the individual susceptibility to electric shock. The shock which causes death is apparently often psychic rather than somatic, the injured succumbing to the unexpected insult rather than to any cellular changes. Death is often reported as the result of unexpected contact with a low voltage current, while in the electrocution of criminals life is notoriously often still present and resuscitation could probably be successfully accomplished even after repeated shocks from a current carrying several thousand volts.

In some cases the higher voltage seems to produce a profound psychic effect of a somewhat different variety. Recently I examined a man who claimed to be disabled as the result of an electric shock received five months before. He had taken hold of an extension lamp socket, and received a shock which had, according to his own statements, rendered him unconscious for several hours, and caused his heart to stop beating for several minutes. Later he learned, so he said, that instead of the usual 120 volt current, a 5000 volt current was passing through this wire. In the first few weeks following the accident, he improved steadily; then after a month of comparative well-being, he became paralyzed. At the time of his examination, he dragged the left leg stiffly after him; the left hand hung loosely from the wrist but the left elbow was held stiffly. The reflexes were practically normal, and a definite hemianesthesia was noted. There was no true muscle atrophy on the supposedly paralyzed side, and when the patient's attention was diverted, he used some of the muscles supposed to be paralyzed. In this case, there was no difficulty in determining that any lesion present was functional and not organic, but the differentiation between a traumatic hysteria and frank malingering did offer something of a problem. In any event we must assume that the 4000 volts produced a psychic rather than a somatic reaction.

Whether or not we attribute the organic and functional nerve lesions sometimes observed following electric accidents, to these accidents alone or to their association with some underlying pathology, the treatment is essentially that given similar lesions of any origin.

THE HYPERTROPHY OF THE PROSTATE*

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The hypertrophy of the prostate is still an unsolved question as to the pathology and an unclear problem as a medical term. Since Virchow many authors have tried to clear up and to define this unsuitable term. And this fact proves very well that "hypertrophy of the prostate" as a term does not satisfy anybody. But in spite of all this the text-books of pathology and surgery continue to use this term as a definition of a certain pathological process. As it is well known, Virchow held, that the prostatic hypertrophy was due to the formation of myomata in it. But he was unsuccessful in his propagation of this idea, and it seems to me, because of a marked increase in interest in venerology at this time. Most of the authors claimed that hypertrophy of the prostate is always a direct result of an inflammation of the prostate. The leader of the supporters of this view was Ciechanowsky. He held that hypertrophy of the prostate is always a result of chronic prostatitis. In his conception this pathological process develops as follows: First stage— inflammatory changes in the acini of the glands, and second stage—periglandular and endoglandular infiltration and formation of new connective tissue. This tissue constricts the ducts and produces in that way a hypertrophy of the acini of the glands and even of the muscular tissue. Later on, this theory met with a strong opposition and, it seems to me, without justification. Although I do not intend to affirm that hypertrophy of the prostate is always a result of a chronic prostatitis. Ciechanowsky tries to prove his theory by the well-known facts, that there is always a certain relationship between hypertrophy of the prostate and present or former inflammatory processes of the urethra. There are also always inflammatory changes present in the hypertrophied prostate. It is self-evident that neither of these effects are provable. First, we know, that the hypertrophy of the prostate is often found in older men, who never had any lesions of the urethra. Rothchild found that in twenty-seven out of thirty prostates examined at autopsy chronic prostatitis was present, and also in 90 per cent of all individuals examined. And Young states that chronic prostatitis is one of the most common diseases with which the male is afflicted. In thirty prostates surgically removed at the Iowa State University

Hospital I noted marked signs of chronic prostatitis in all cases, which should be interpreted as secondary affections, following pathological changes of the tissue elements of the prostate. The fact that all these inflammatory changes (increased vascularity, swelling and leucocytosis) were found between and about the pathologically changed tissue elements proves this interpretation. And then, while we do not think that Ciechanowsky's theory is always right, we are sure that

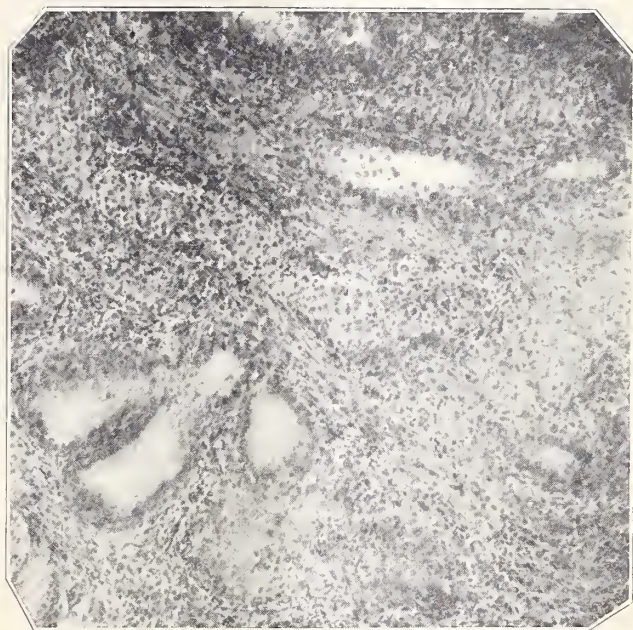


Figure 2. Chronic prostatitis. Showing changes of glands and cellular reaction in the interglandular stroma.

there are some cases where chronic prostatitis does lead to productive alterations in the prostate—to the so-called hypertrophy of the prostate. I found seven such cases among the thirty prostates examined. I will return later on to this so interesting process which is too often neglected.

The most important step toward the abolition of the wrong term, "hypertrophy of the prostate," was a paper of Ribbert (1915), where the author held that the primary cause of the enlargement of the prostate is the presence in the gland of a benign or more seldom a malignant tumor. This paper failed to be appreciated and the old term, hypertrophy of the prostate, is still dominating as before. It has always seemed to me that this term is absolutely wrong. And if we will compare hypertrophy of the prostate with some other pathologically hypertrophied organ, for example, with the hypertrophied heart—how different are these processes. The unfitness of this term, it seems to me, is the reason why many medical students and even young doctors have not a right idea about this process in the prostate, which is so far from a true hypertrophy.

*Presented before a meeting of the Surgical Staff of the Hospital November 23, 1922.

These facts raised the question before me: Is hypertrophy of the prostate, a certain, constant, specific pathological process? Zuckerkandl and Tandler proved that in the process we call hyper-

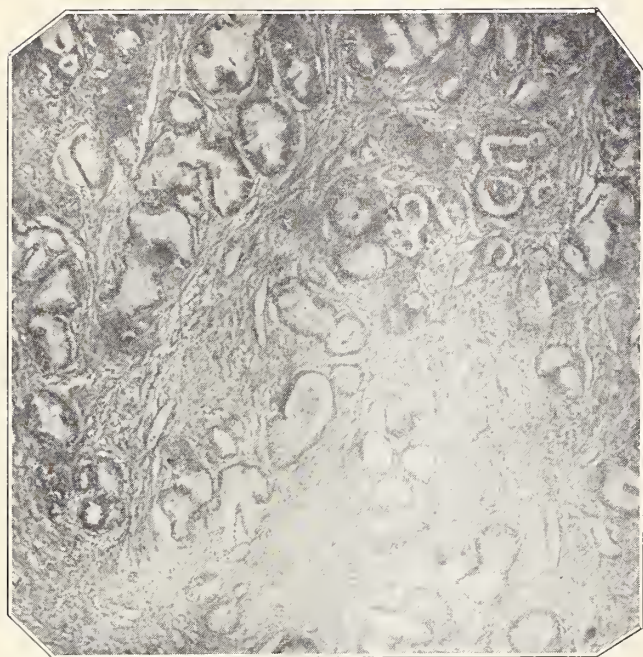


Figure 3. Fibroadenoma intercanalicular type.

trophy of the prostate there is not an equal uniform hypertrophy of the whole gland present. An hypertrophy of all parts of the prostate does not exist. In the most pronounced hypertrophy cases we always find parts of the prostate atrophied. In hypertrophy of the prostate the nodules, which cause the enlargement of the gland press on the adjacent normal tissue, which forms the surgical capsule of the hypertrophied prostate. This capsule consists of prostatic tissue and has nothing to do with the connective tissue, which composes the anatomical capsule of the gland. This surgical capsule remains after a surgical decapsulation of the enlarged gland—the so-called prostatectomy. I have the opportunity to demonstrate to you today a surgical capsule which remained in the body after a prostatectomy performed on a patient three days before death and you can be convinced that this fact is true. And therefore, we see that the anatomical substratum of hypertrophy of the prostate depends upon the anatomic histological substratum of that local process—of the nodules. And what kind of histological changes are here? Trying to answer this question on grounds of actual facts, I reexamined microscopically thirty prostates removed surgically at the Iowa State University Hospital during 1920, 1921, and the ten months of 1922. From this number I excluded three cases of carcinoma and

one case of an acute suppurative prostatitis. The remaining twenty-six cases, which belong to the so-called hypertrophic prostates, I divided into three different groups according to the chief pathological changes of each case. The first group: Fibromyomatous type—a diffused growth of connective tissue bundles interwoven with straits of smooth muscle tissue. To this group belong two cases. The second group: Adenomatous type—glandular overgrowth. It embraces seventeen cases. The third group: Enlargement of the prostate associated with prominent chronic prostatitis—seven cases. It is self-evident that it is impossible to draw an exact border-line between the cases of these three types. There were cases, where histological changes of one type were interwoven with those of another.

The Pathology of the Cases of the First Type—

Hyperplasia of the fibrous and muscular tissue and atrophy of the glands. The involved part of the prostate is a dense, hard, grayish white mass, consisting of numerous nodules, which on section are found to be sharply differentiated from the surrounding tissue due to the fact that it projects above the cut surface. This tissue is poor in blood-vessels and is composed of bundles of fibrills interwoven in various directions. Occasionally between the separate strands there are a

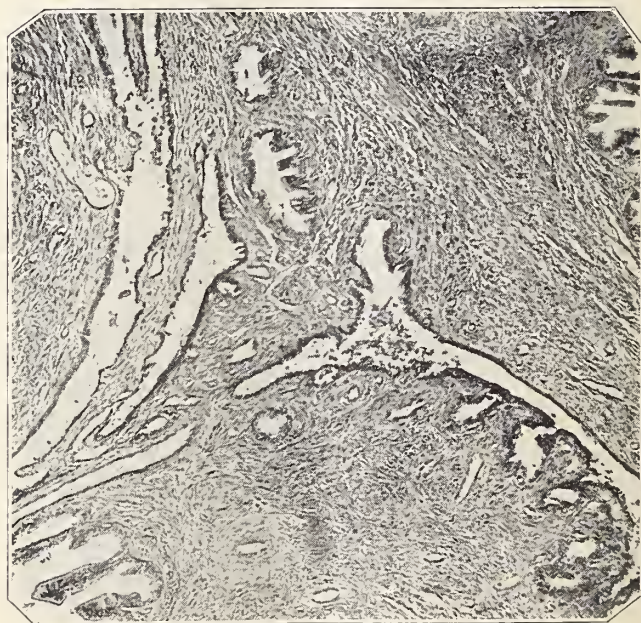


Figure 4. Fibroadenoma, intracanalicular type. Showing new formed gland acini in the fibrous tissue masse growing into gland ducts.

few small atrophic gland acini present. This picture we found in two cases. More often we met with a transitional form between the first and the second type. The cut surface there shows grayish white translucent nodules, mixed with

nodules of pearl-like shape and of dense consistency. The bundles of fibrills form a more or less wide-meshed network and in the meshes there are hyperplastic glands present.

The Pathology of the Adenomatous Type—Their gross appearance is very interesting. The pathologically changed part is well circumscribed and capsulated and does not infiltrate the surrounding tissue which becomes more and more dense because of compression by the growing tumor-like nodule. The latter is well supplied with blood-vessels and does not reveal therefore any necrotic changes. Microscopically they are composed of glandular alveoli, lined with cuboidal cells, which appear in single or multiple layers. This lining epithelium forms budding vegetations into the alveoli. Desquamation of lining cells; retained secretion in the dilated alveoli, so that they resemble cystic formations lined with flattened epithelium; the ingrowth of connective tissue from the walls of these cysts in form of papillary projections and the typical overgrowth of secreting cells assume a true tumor characteristic. Occasionally there is a distinct hyperplasia of the glands and multiplication of the alveoli. The secretion is normal or even decreased; the cells are hypertrophied, the interstitium is scanty.

The Pathology of the Third Type—As we mentioned before, the enlargement of the prostate is sometimes a result of a chronic prostatitis. The

the excretory ducts and produce an obstruction to the emptying of the alveoli. Soon a muscular overgrowth begins—an attempt of nature to expel from the gland the retained secretion. This

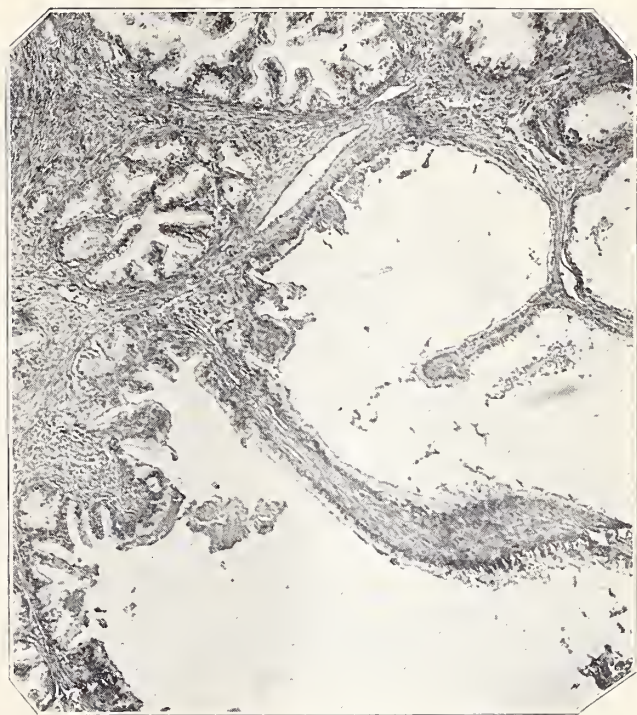


Figure 6. Cystadenoma. Showing the prominent papillary projections of the acini wall in the cystically dilated glands.

retained secretion accounts for the cystic dilatation of the alveoli and consequently we have to deal with the well-known picture of a multiple adenoma. Multiple adenomata are met with in other glands as well as in the prostate, especially in the breast. And there they are also secondary to a primary pathological condition—to the chronic mastitis. In this type of enlargement of the prostate the whole organ is involved, pathologically changed. As in the first type, the pathological process here develops slowly during many years and reveals itself in the later years of life.

The descriptions of the pathological changes of different types of enlargement of the prostate given above resemble very much those of similar lesions in other organs of the human body. So we can draw an analogy between our first type and the fibromyomatous tumors of the uterus and between the lesions of the second and third types and the lesions of the breast. I placed here seven microphotographs¹ of some of my cases examined, from which you can easily note how much the pathological changes in the types of the so-called hypertrophy of the prostate resembles

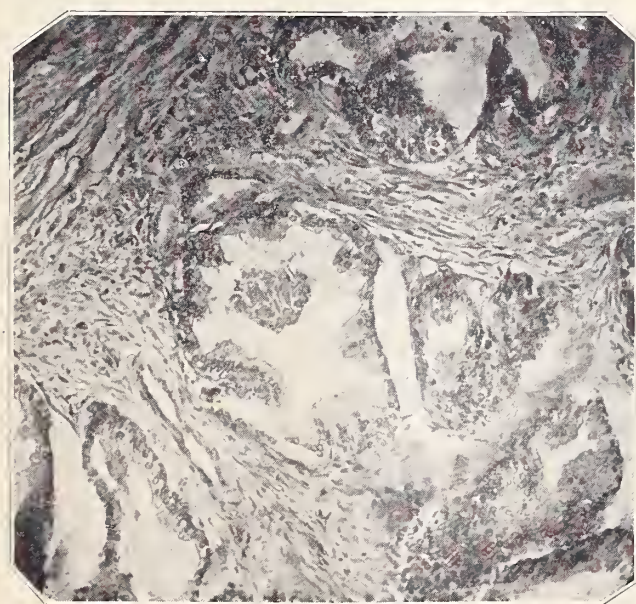


Figure 5. Adenoma (high power). Showing budding vegetations of the gland lining into the acini lumina.

characteristic type of this condition is a diffuse interstitial productive inflammation with a hyperplasia of connective tissue about the ducts and the acini. Later on fibrous contraction can obstruct

1. (Figure 1 not shown.) Fibromyoma; bundles of muscle and fibrous tissue are interwoven in various directions. Note the entire absence of glandular elements.

those in tumors of the breast and uterus histologically.

I think that this striking resemblance of the pathological picture of the different processes in the enlarged prostate to those of the tumors of the uterus and the breast gives us the right to abolish the old unsatisfactory term, hypertrophy of the prostate, and substitute for it a definite term according to the productive pathological pro-

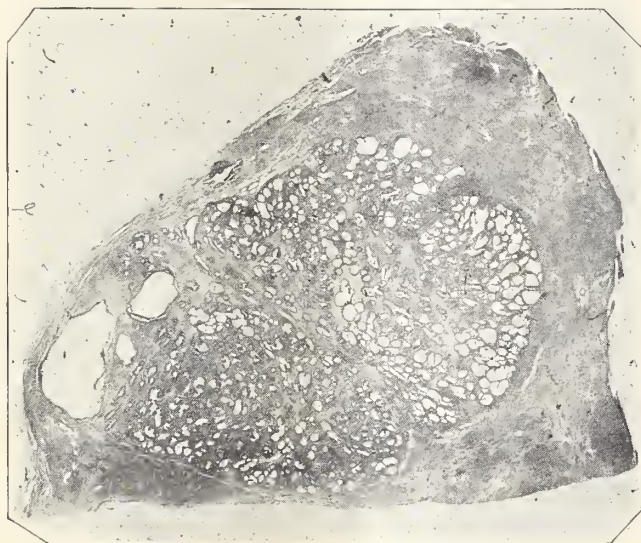


Figure 7. Cystadenoma (enlarged 3 times). Note the typical encapsulation of the tumor.

cess, which resembles this type of changes in the prostate. I do not think that carcinoma of the prostate is an exception, but we all know that a carcinomatous process in the prostate is called, and rightly so, carcinoma and not malignant hypertrophy of the prostate. These are the reasons why we suggest the following nomenclature of the benign enlargement of the prostate. We distinguish myomata and fibromyomata of the prostate, adenomata and fibroadenomata and chronic prostatitis. It is self-evident that there may be a farther differentiation of this terminology as to the form and stage of the pathological changes of any given case.

We are sure that the acceptance of an accurately differentiated terminology is not only a theoretical question but also one of practical importance. It is now a matter of fact, that the way to a successful fight against tumors leads through an analytical differentiation of those and not through a synthetic assimilation.

OFFICERS OF THE IOWA STATE MEDICAL SOCIETY

Elected at the Annual Session Held at Ottumwa
May 9-11, 1923

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SOME PHASES OF DYSTHYROIDISM

Dr. C. P. Howard of Iowa City read a paper before the Canadian Medical Association at Winnipeg in June last under the above title, in which he expressed views of great interest and importance. Dr. Howard warns against permitting laboratory methods obscuring clinical studies. He expresses the fear that physicians may accept the metabolic basal rate to the prejudice of clinical history and physical examination. "Are we to accept as axiomatic that a normal basal rate means that the symptoms of the case under investigation are not due to thyroid intoxication? All of you, I think will agree that the very most a normal basal rate can signify is an absence of a marked thyroid toxicity."

Dr. Howard cites Plummer and Boothby as believing that "hyperthyroidism" implies an increased metabolic rate and that a normal rate excludes hyperthyroidism. Assuming that exophthalmic goitre is due to an excessive excretion of normal thyroid hormone the increase in metabolic rate, as is usually found, is assigned to this excessive excretion. Is therefore, the basal rate to be the sole criterion of the absence or presence of a disordered function of the thyroid gland? The author holds that it is too much to expect that and "method of precision" as the basal rate measurement purports to be is sufficient, and we accordingly would depend rather on the clinical history and physical examination in an obscure case than any one laboratory method. Valuable as that method may be in the majority of instances.

The Journal of the Iowa State Medical Society

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The public in recent years has made great advance in knowledge and appreciation of the contributions of medical science to human welfare, but appear to have made a distinction between medical science and medical practice. We may leave out of consideration the groups of foolish people who follow strange doctrines of medicine and religion and confine our observations to the intelligent public who look to scientific medicine as they would to engineering or architecture for welfare results. It is true when those activities are directed by the public they are awkwardly and expensively managed, but if time enough is given the final result is fairly good. When it comes to the medical services, it is like doctors' bills, to be paid when all other accounts are settled. When the public interests are involved all other interests are to be provided for first, and if there are any funds left then the medical side may be considered, unless some serious disaster, as an epidemic of disease should arise taking a large toll of human life, then an appeal to medical science is made without regard to the usual order of sequences.

The budget plan in relation to public and private expenses is to be recommended as a safe and wise method of economy, but is difficult of application when it comes to sickness and accident. If through some accident the clothing or automobile appropriation should fall short of expectation, patches and repairs may be applied until the new budget is made up, but sickness cannot be disposed of in like manner, until the danger is

over, medical service must be employed. The government operates on this plan. Under the ruling as applied to the Canal Zone, the soldier is permitted to be sick or injured until the budget appropriation is exhausted and then he must remain well. There are about 8,000 soldiers in the Zone, with about half the number of surgeons necessary to care for them under ordinary circumstances is provided and about half enough money to pay for their hospitalization, at the government hospital at Ancon; a curious condition. We are in Panama for the Canal, the Canal is for commerce and national defense and the soldiers are the guardians of the Canal. Ancon Hospital, owned by the government, is managed by the Canal, all coordinated by the governor of the Canal, who reports to the Secretary of War. When a soldier is sick or injured so as to need hospital care he is sent to Ancon Hospital, and the hospital charges \$2.25 a day and from \$5 to \$15 for every operation against the army appropriation for hospitalization purposes. This arrangement will permit each soldier to be sick about two and one-half days a year. After the money has been expended, what will he do? The commanding officer of the various posts, or the commanding general of the Zone cannot stop sickness or exceed the appropriation. The final result is that some of the post emergency hospitals have been enlarged and equipped with all kinds of supplies for any kind of medical or surgical work, and are taking care of all their hospitalized soldiers. All this is being done almost under the shadow of one of the finest hospitals in the world with a capacity of from 800 to 1200 beds. There are now about 260 patients, mostly foreigners, from Panama City and the west coast of South America, women and children, obstetrical cases and all others but no soldiers. Everybody recognizes the wrong of this. The fault is at Washington. It must be shown to the country that the Canal is so managed as to make money and Ancon Hospital is one of the factors.

Another trying fact is that all but two or three of the medical staff are taken from the army without credit to the army, thus crippling the medical service. Four companies of soldiers are being sent into the jungles for a period of several months forty to fifty miles from the Zone for surveying purposes, without a doctor, no roads, only pack mules and wireless as a means of communication. On account of the high Pacific tides (18 to 20 ft.) twice in twenty-four hours, boats can go up some of the small creeks several miles, but this means of communication does not by several miles reach the soldiers. If anything se-

rious happens a doctor could not reach their camps in less than eight hours, and in return the injured or sick man could be transported to the boats by stretcher and by boat to the hospital. The boat cannot be navigated until the tide is high and then go out with the tide until the Pacific is reached.

I mention these facts to show that the elimination of medical officers by an act of congress in the "interest of economy" has worked a great hardship to the soldiers, both enlisted men and officers.

The Division Surgeon who was sent to the Zone on staff duty has been obliged to take up the duties of Post Surgeon and work long hours at one of the army posts which has been converted into a general medical and surgical hospital to do the work that should go to Ancon Hospital, which is practically a private hospital making money for the Canal by using medical men who belong to the army. The army officers if sick pay to the hospital \$4 a day and \$5 a day for members of their family. For instance, if Dr. A. of the army, detailed to serve at Ancon Hospital, should have a sick wife and she should be assigned to his service, he would have to pay \$5 a day for his own services. Officers who have been accustomed to the methods of Walter Reed or Lettermann Hospitals of charging one and one-half dollars a day, do not feel they are treated right—especially in view of the fact that the government offered as an inducement to enter the service, free medical care.

The confusion that has grown out of the Ancon Hospital question is due to the fact that Ancon was built by the French for the care of employees in the construction days of the Canal and was taken over by the United States as a part of the French equipment and continued to function as a Canal hospital, not a military hospital. When the Canal was completed and the number of laborers greatly reduced, and the Canal Zone made a military division, Ancon Hospital assumed somewhat different functions. During construction days while a government hospital it was operated very much as a private hospital, with contract doctors as the medical personnel. The number of Canal employees needing hospital care was greatly reduced and as the reputation of the institution increased many private patients from the Republic of Panama and west coast of South America having no relation to the U. S. Government, were admitted and the profits credited to the Canal. The medical personnel was gradually changed by substituting army doctors, thus saving their salaries to the hospital (Panama Canal)

until now there are twenty-one army doctors detailed to Ancon Hospital. The complaint on the part of the army doctors is that Ancon Hospital is absorbing the army doctors assigned to the Zone, producing a serious shortage at the posts, and at the same time charging against the posts \$2.25 per day for every enlisted man treated and not crediting to the post the salaries of doctors furnished by the army about \$35,000.

That one may know the situation today as it exists at Ancon Hospital; there are only a small number of army patients in the hospital and twenty-one army doctors assigned to the hospital. This condition is deplored by every army officer on the Zone, but as the Panama Canal and Ancon Hospital are under the direction of the Secretary of War and as a showing of profits must be made in the management of the Canal for public use, everything possible must be placed to the credit of the Canal, even at the very serious risk of soldiers' and employees' health and lives.

The result has been the organization of a Division Hospital at Corozal.

EXCLUDING DISEASE FROM THE CANAL ZONE

In our leading editorial in the March 15, 1923, dealing with health conditions in the Canal Zone, there was one phase of the subject on which we did not touch. That phase is the exclusion of disease from the Panama Canal through the operation of the maritime quarantines located at the terminal cities of Cristobal and Balboa. Parenthetically, it may be remarked that quarantine and immigration are co-ordinate functions in the Canal Zone and that the latter exercises a tremendous influence in preventing the influx of persons with venereal diseases and drug addiction. With that aspect of the question it is not proposed to deal at the present time.

Had it not been for the proper administration of the quarantine function, Gorgas' work would have made the unending labors of Sisyphus dwindle into insignificance. It would have been exceedingly difficult for him to have eradicated disease unless an adequate dam kept out the epidemic flood from all parts of the world. During the construction period only the most rigid quarantine prevented reinfection with yellow fever and the introduction of small-pox and bubonic plague. The men who did this work were officers of the U. S. Public Health Service, serving as a part of the Canal Organization.

With the opening of the Canal to traffic, a new problem arose. When a ship is paying several

thousand dollars in order to avoid the dangerous and expensive passage around the Horn or via the rival routes of the Suez and Cape of Good Hope, or for the purpose of saving shippers the expense of transcontinental transport by the Tehuantepec or Panama railways, every lost minute translates itself into lost money. The ships must be moved, yet the Canal Zone must be protected against incursions of exotic disease and, at the same time, discharge its moral obligation to prevent so far as possible the passage of disease through this international water-way and out to the rest of the world. There was still another factor in the problem, that of doing these things at the lowest possible cost to the already taxed people of the United States.

These things have all been accomplished with wonderful simplicity by the application of sanitary science, open-mindedness and good business sense. The use of speed-launches for boarding, the institution of wireless pratique for vessels which desire to transit the Canal without receipt or discharge of cargo or passengers, the lengthening of the hours for receiving and examining vessels, the inspection of vessels under way, these were some of the time savers adopted. The rapid and thorough periodic fumigation of vessels and the routine application of ratguards to mooring lines helped to exclude plague. The inspection of foreign ports by the chief quarantine officer and the stimulation of their governments to put such ports in good sanitary condition lowered the danger of the exportation of disease to the Canal Zone. The re-arrangement and consolidation of the quarantine stations reduced their net running expenses from \$65,896.04 in 1920 to \$39,517.55 in 1922. Their estimated cost for 1923 is \$30,000, despite the fact that the number of ships entering the ports of the Canal is increasing with great rapidity.

These things have been done without the introduction or transit of a single case of plague or yellow fever. Not only have the United States and the ports of the world been thus protected in exactly the same manner as has the Canal but our commerce by sea has also been tremendously facilitated. This is the kind of intelligent work which the American people appreciates in its public servants.

IOWA STATE UNIVERSITY NEWS NOTES

Dr. Don M. Griswold, M.D.

Dr. Herbert Olson, formerly of Iowa City, died April 6. Dr. Olson graduated in the Medical College, S. U. I. in 1919. After his graduation, he was connected with Dr. Dean, dean of the college of

medicine where he did special work in eye, ear, nose and throat. He was a member of the Phi Beta Pi fraternity.

Announcement has been received of the wedding of Miss Pauline Thompson to Dean McAllister Lierle, both of S. U. I. Dr. Lierle is a graduate of the medical college, and took his internship in the Boston University Hospital in 1922. Beginning with July, 1923, Dr. Lierle will be clinical assistant to Dr. L. W. Dean, dean of the Medical College, S. U. I.

Announcement has been received of the wedding of Miss Ella Powers to Mr. Bruce McDowell, both of Hampton, Iowa. The bride is a graduate of the State University of Iowa, 1921. The bridegroom is a senior in the college of medicine. They will remain in Iowa City until Mr. McDowell finishes his medical course.

Announcement has been received of the marriage of Miss Faith Meek of Knoxville, Iowa, to Dr. L. M. Randall of Denison. The bridegroom is a graduate of the College of Medicine, S. U. I. and is now clinical assistant in the department of gynecology, S. U. I. Hospital.

Announcement has been received of the marriage of Miss Ethel Hellenbeck of Laurens, Iowa, to Dr. L. W. Loving of Des Moines. The bridegroom is a former student of the State University of Iowa and an alumnus of the University of Illinois. They will make their home in Laurens, Iowa.

W. D. Hayes has been appointed full time health commissioner of Sioux City. He has previously been city bacteriologist and city food inspector.

*Dwight M. Ensign of Iowa City and Arthur E. McMahon of Iowa Falls have been elected members of the honorary medical fraternity, Alpha Omega Alpha. This is the highest scholastic honor given an undergraduate medical student. Members of the senior medical class who have been elected are John Eiel of Buffalo Center; Thomas Treynor, Council Bluffs; Clayton R. Johnson, Iowa City; Emmet Kenefick, Eagle Grove, and Edward W. Anderson of Des Moines. Dr. William F. Boiler, professor of ophthalmology and Dr. Clarence Van Epps, professor of theory and practice of medicine, were the faculty members elected.

A course in nursing administration and superintendency for experienced graduate nurses will be given at the University Hospital during the first session of summer school.

Dr. George E. MacLean, formerly president of the State University of Iowa, has been designated by the board of education to represent the college

of medicine at the exercises commemorating the eight hundredth anniversary of the founding of St. Bartholomews Hospital in London.

Dr. E. V. McCullom of Johns Hopkins University gave an address on "Human Experience with Diet in its Relation to Skeletal Development," April 30.

The training school for nurses have revised the schedule of classes so that the course can be begun either at the beginning of the college year in September or at the beginning of the second semester in February.

Drs. Jenkins, Delph, Thein and Sharp, make up the group who are working for higher collegiate degrees in the head specialties. In addition to the internes and the house staff each year, the department of head specialties train a few men who have already had special work in this subject.

Dr. Arthur J. Lomas has resigned as superintendent of the University Hospital. He left May 1st to accept the superintendency of the hospital of the University of Maryland at Baltimore, his former home.

Dr. James Russel of the class of 1920 is going to Vienna to spend a year in the Pediatric Clinic.

Dr. Wade Brown of Johns Hopkins University called on friends in the college of medicine early in May.

SOCIETY PROCEEDINGS

Cass County Medical Society

The Cass County Medical Society held a session in the Masonic parlor, in Atlantic, Wednesday, May 2, 1923, at 1:30 p. m.

Program—Influenza, Dr. R. L. Barnett, Atlantic. Comments on the Annual Congress on Medical Education, held in Chicago, on March 5, 6 and 7, at which Dr. C. L. Campbell was a commissioned delegate, Dr. C. L. Campbell, Atlantic. Presentation of an Armless and Legless Baby, Dr. H. D. Hully, Griswold.

The following doctors were present: Earl Montgomery, R. A. Becker, R. L. Barnett, C. G. Clark, M. H. Lynch, F. J. Becker, W. S. Greenleaf, W. F. Graham, H. A. Johnson, C. L. Campbell, Atlantic; G. M. Adair, Anita; Miller, Massena; Arthur W. Anderson, Cumberland; C. C. Gibson, Lewis; H. D. Hully, Griswold; R. B. Chisholm, Griswold; M. F. Stultz, Wiota; W. B. Weir, Griswold.

There was an interesting discussion of Dr. Barnett's paper and the armless and legless baby created much interest. An x-ray demonstration of the baby was given by Dr. Greenleaf at his office, after the meeting adjourned.

Three new members were taken in: Dr. Miller of

Massena, Dr. Anderson of Cumberland, and Dr. Johnson of Atlantic.

The society voted to have a session at Atlantic in October at which the ladies will be invited and banquet given.

W. F. Stultz, Sec'y.

Decatur County Medical Society

Decatur County Medical Society met in Leon, Tuesday evening, April 5, 1923.

Papers were read by Doctors G. I. Armitage of Murray, D. S. Burbank of Le Roy and J. F. Herrick of Ottumwa. A general discussion followed and much interest was manifest. About forty were in attendance.

Dr. J. W. Waites, president; Dr. B. L. Ecker, secretary.

Plymouth County Medical Society

The Plymouth County Medical Society held its meeting Tuesday evening in Remsen as guests of the Remsen members. The meeting was held in the offices of Drs. A. H. Jastram and A. F. Koch, and thirteen physicians and dentists from the various towns of the county were present.

Those present at the meeting were: Drs. W. J. Brunner, J. H. Kerr, George Mattison and Lamphere of Akron; M. F. Joynt and McDonald of Marcus; W. T. Shepard, W. Larson, M. J. Joynt, W. Downing, McFadden, Cunningham, and W. J. Brucher of LeMars, and A. H. Jastram, A. F. Koch, C. E. Stewart and J. E. McGovern of Remsen.

Drs. McGovern of Remsen and McFadden of Le Mars, became members of the society.

There was only one program number, in which, however, all the members took part. This was a round-table discussion of Diseases of the Heart.

Following the meeting the Remsen doctors entertained at a luncheon at the Duster restaurant.

The next meeting of the society will be held in Merrill next September.

Sac and Ida County Medical Societies

A joint meeting of the Sac and Ida County Medical Societies was held at the Park Hotel, Sac City, May 18. After a six-thirty dinner, a round table discussion of State Medicine and County Unit System was held. Dr. G. C. Moorhead of Ida Grove, gave a very interesting talk on these subjects. The Shepard-Towner Maternity plan was also discussed. Officers for the ensuing year were elected as follows: President, F. H. McCray, Schaller; secretary, James McAllister, Odebolt.

"J. M."

Scott County Medical Society

The regular meeting of Scott County Medical Society was held May 1, 1923, Chamber of Commerce, Davenport.

Program—Diseases of the Ischio Rectum, Dr. Donohue. High Spots in Special Practice, Dr. Hands.

Worth County Medical Society

The Worth County Medical Society met April 28, 1923, at the office of Dr. Hurd, Northwood, Iowa. Officers for the new year were elected as follows: President, Dr. S. S. Westly, Manly; vice-president, Dr. C. W. Sanders, Northwood; secretary-treasurer, Dr. C. A. Hurd, Northwood, in place of Dr. E. H. Dwille, deceased.

Dr. S. S. Westly was elected delegate to the State Society and Dr. Sanders alternate.

Dr. M. B. Peterson, a graduate of Rush Medical College, has located in Northwood and joined our society at this meeting. Its membership now includes every physician now in the county, except one.

We plan to have our next county meeting May 21.

C. A. Hurd, Sec'y.

Northwestern Iowa Medical Society

The Northwestern Iowa Medical Society regular spring meeting was held at Sheldon, Iowa, April 25, 1923.

Program—Treatment of Fractures, Dr. A. J. Meyer. Factors Influencing the Safety of Ether Anesthesia, Dr. Ralph M. Waters, Sioux City. Case Report with Presentation of Patient; Skin Transplantation—Abdomen to Back of Hand, Dr. F. S. Hough. Some Remarks on the Etiology and Treatment of Puerperal Eclampsia by the Tweedy Method, Dr. D. L. Rundlett, Sioux Falls. The Humane in Medicine—President's Address, Dr. C. L. Roland.

The Northwestern Iowa Medical Society was organized at Sheldon, May 28, 1915. It includes the counties of Sioux, Lyon, Osceola and O'Brien, and every legally registered physician in those counties who is in good moral and professional standing, and who does not support or practice any exclusive system of medicine, is eligible to membership. Applications for membership should be made to the secretary.

Officers—Dr. C. L. Roland, president, Chatsworth; Dr. G. H. Boetel, vice-president, Rock Rapids; Dr. Jay M. Crowley, secretary-treasurer, Rock Rapids.

Censors—Dr. F. J. McAllister, 1926; Dr. H. L. Avery, 1923; Dr. D. G. Lass, 1924; Dr. Peter I. Dahl, 1925.

Committees—Local arrangements: Dr. F. W. Cram. Memorial: Dr. W. R. Brock, Dr. L. L. Corcoran, Dr. A. J. Meyer. Consolidation: Dr. McAllister (chairman), Dr. Corcoran (vice-chairman), Drs. Cram, Winkler and Roland.

J. M. Crowley, Sec'y.

Southwestern Iowa Medical Society

The Southwestern Iowa Medical Society held their annual meeting at the Iowana Hotel and at the Greater Community Hospital. At 12 o'clock the members of the society enjoyed a luncheon at the Iowana and at 1 o'clock they adjourned to the hospital where clinics were held and a program given.

The Southwestern Iowa Medical Society was organized twenty-five years ago and the meetings are

held twice a year with annual meetings always being held in this city.

Following is a list of the officers and the program for the afternoon.

Clinics by Dr. J. G. McCrea, Dr. H. A. Childs, Dr. A. F. Watts.

Following are the officers—President, Dr. W. S. Reiley, Red Oak; vice-president, Dr. J. W. Beauchamp, Bedford; secretary, Dr. J. S. Coontz, Garden Grove.

Program—Meeting called at 1:15 p. m. sharp. Address and Clinic Cardiac Diseases, Dr. W. E. Sanders, Des Moines. Diphtheria, Dr. B. S. Walker, Corydon. Intussusception, Dr. Gerald V. Caughlan, Glenwood. Diabetes Mellitis, Dr. Edwin B. Winnett, Des Moines. Field Activities of the Iowa State Medical Society, Dr. R. P. Fagan, secretary state board of health, Des Moines. Mr. T. J. Edmonds, secretary field activities committee, Des Moines. Dr. F. E. Sampson, director field activities, Creston.

A list of doctors and members who were in attendance: J. S. Coontz, Garden Grove; F. W. Sells, Becky Sells, Eva M. Shivley, Osceola; J. A. Harper, Greenfield; O. P. Jamison, Weldon; Rodney P. Fagan, Des Moines; Mrs. O. P. Jamison, Weldon; E. J. Watson, Diagonal; Edna K. Sexsmith, Greenfield; J. H. McCall, Allerton; W. E. Sanders, Des Moines; A. L. Yocom, Chariton; K. R. and L. D. Huff, Lenox; L. O. Carey, Des Moines; C. V. Cangelan, Glenwood; W. A. Wright, Thayer; F. E. Sampson, Creston; A. J. Edmonds, Des Moines; A. S. Beatty, Creston; J. G. McCrea, Creston; F. A. Ely, Des Moines; J. W. Hill, Ellston; S. W. DeLong, Tingley; B. S. Walker, Corydon; T. V. Golden, Creston; C. O. Freel, Murray; John C. Parsons, Creston; Enos Mitchell, Grand River; J. W. Lauder, Afton; A. Fred Watts, Creston; J. H. Wallahan, Corning; H. A. Childs, Creston; C. B. Roe, Afton; E. B. Winnett, Des Moines and Mrs. J. O. Freel, Murray.

J. S. Coontz, Sec'y.

COMING MEETINGS

The regular meeting of the Marion County Medical Society is to be held in Pella, June 21. Both "June" and "Pella" are signs that it will be a good meeting and well attended by both members and visitors.

J. R. Wright, Sec'y-Treas.

The next meeting of the Wall Lake District Medical Society will be held at Wall Lake, June the 21st.

L. M. Jones, Sec'y.

The Sioux Valley Medical Association will hold its mid-summer session at Sioux Falls, South Dakota, July 12, 1923.

The by-laws specify a one-day session. There will be a short and snappy program which will be worth while.

On the Friday following, the local hospitals will present clinics for those who wish to spend two days in Sioux Falls.

R. M. Waters, Sec'y.

PERSONAL MENTION

This is old men's day, as will be observed by the personal notices.

Dr. George W. Carter, formerly of Marshalltown, was lost to us until now. The writer remembers many a pleasant hour with this fine gentleman thirty years and more ago. He comes to us again through the Marshalltown "Republican." Dr. Carter celebrated his ninety-sixth birthday on April 18 at Boulder, Colorado, where he has lived with his niece, Mrs. Junius Henderson. Dr. Carter was born at Heffleton, Dorsetshire, England, April 18, 1827. His father died in 1836, when his mother brought him to America and settled at Portage Fall, N. Y. His mother died in 1842. In 1850 he entered the University of Michigan as a medical student and graduated in 1853, and is now the oldest living alumnus of the University. Dr. Carter began practice at Davenport, where he remained until 1862, when he enlisted for service in the Civil War as a surgeon. He was assigned to the Ninth Iowa Infantry and later to the Third Iowa Cavalry and was mustered out in 1865 as a major. He returned to Davenport after the war, and four years later moved to Marshalltown, where he practiced his profession from 1869 to 1894, when he retired, and has since 1906 lived at Boulder, Colorado.

Dr. A. L. Brooks, pioneer physician and surgeon of Audubon county, observed the fortieth anniversary of his arrival in the county April 13. Near two score of his patients and friends from all parts of the county gathered at his home in the afternoon and evening where open house was held. Toward the close of the celebration last night Charles White, local attorney, presented Dr. Brooks with \$520 in gold in behalf of his many friends. Dr. Brooks came to Gray in 1883 following his graduation from Rush Medical College, Chicago. Three years later he moved to Audubon where he remained a year. He returned to Gray but removed to Audubon in 1889.

Dr. D. S. Fairchild of Clinton was signally honored at the state convention of the Iowa State Medical Society held last week at Ottumwa in being re-elected editor of the State Medical Society's magazine, a publication which is prominent as one of the most distinctive magazines of its kind published in the United States. During the convention the members also paid special tribute to the Clinton physician in recognition of his fifty years as member of the Iowa organization in the form of a gathering in his honor at which time he was presented with an engraved gold pen and pencil. At a recent meeting of the Polk County Society, which he also attended, the Doctor was presented with a gold headed cane in honor of his half century's record as a member of that association. The Doctor has been engaged in active practice for the past fifty-four years and at the present time is still active in his work.—Clinton Herald.

Members of the Polk County Medical Society gave a testimonial dinner at the Chamber of Commerce library, Des Moines, April 24, honoring Dr. David S. Fairchild of Clinton, who celebrated the fiftieth anniversary of his membership in the Iowa State Medical Society yesterday. More than a hundred members attended the banquet. Informal talks were given by Dr. Lewis Schooler. Dr. James T. Priestley and Dr. Fairchild. Resolutions congratulating Dr. Fairchild were read after which the association presented him with a gold headed ebony cane.

In Dr. A. B. Bowen, who celebrated his eighty-first birthday anniversary Friday, April 13, Maquoketa is a man who has enjoyed a privilege vouchsafed to few men—that of serving a community professionally for more than half a century. He came here in September, 1869, and in 1919 the County Medical Association celebrated his semi-centennial. At that celebration were present three young physicians of the county whom Dr. Bowen had introduced to the light of this world, Drs. Stewart Bowman, O. L. Frank and F. J. Swift. Dr. Bowen is still actively engaged in his profession, though his son, J. C., whom the Doctor has taken into partnership with him, takes the hardest part of the work. The Doctor has practiced in four generations of many families here, and in five generations, in a few instances. During these fifty-four years he has seen many changes in the community and in the practice of medicine. The practice of his profession has taken him into many places of difficulty. He is a surgeon of no mean ability and his stories of portable operating tables and kitchen laboratory, where surgery was performed by simple candle light, show the great debt medicine and surgery owe to scientific and public institutions. Fifty-four years of service rendered have given him a wealth of memories and of experiences worth recounting. He has seen many changes in the community and in the practice of his profession. Among these may be mentioned the advent of the telephone, which keeps him informed of each change in the condition of his patients; the automobile, which saves many hours of time and much physical weariness; the electric light which guides his surgeon's knife; the sugar coating and the gelatine capsule which makes the taking of medicine almost a pleasure; the passing from this community of "chills and fever;" and the popularity of the nurse who has replaced the good, old-fashioned neighbor who used to come to sit up with the sick ones and who, tired out by the day's toil, snored so loudly the patient could not sleep. Many of those to whom he has brought joy in single or double quantity, or to whom he has spoken words of consolation, or whose pain and suffering he has alleviated, rejoice today that the genial physician has been spared to enjoy this anniversary.—Telegraph-Herald, Maquoketa.

Dr. Alexander S. Begg, a graduate of Drake University in 1907, has been elected dean of the Boston University School of Medicine, according to an an-

nouncement in the Boston Transcript. Dr. Begg is well known in Des Moines. He received his bachelor of science degree at Drake in 1906 and his degree as doctor of medicine in 1907. He later studied at the Harvard School of Medicine, where he was teaching fellow in histology and embryology, and later an instructor in anatomy. He returned to Drake as professor of histology and embryology for a few years and then went to Harvard, where in 1917 he became dean of the Harvard graduate school of medicine. In 1921 he went to Boston University as professor of anatomy. He is colonel in the officers reserve corps, with a notable overseas record; a member of the national board of medical examiners, the American Association of Anatomists, the American Association for the Advancement of Science, the Massachusetts Medical Society, the American Medical Association, and the Alpha Kappa Kappa medical fraternity. He has done noteworthy research work in the field of embryology. At Drake University he was a member of the Gamma Sigma Kappa fraternity.

Dr. L. L. Bond of Denison has announced the donation of his large and exceptionally well selected medical library, surgical instruments and office fixtures to the Methodist Church with the stipulation that they be placed in the most advantageous place in the foreign mission field. Dr. Bond is one of the oldest physicians in this neighborhood having practiced his profession in this county principally at West Side and in Denison for the past forty-eight years where he has been successful with a large practice. A native of West Virginia he came to Wisconsin with his parents and enlisted during the Civil War where he saw many active engagements. Later he attended and graduated from the Rush Medical College of Chicago and five years later came to Crawford county where he built for himself a substantial practice, and wide friendship becoming physician for the Chicago and Northwestern Railroad in 1883; a member of the Missouri Valley Medical Society, the Crawford County Medical Society, Iowa State Medical Society and the American Medical Association. Of recent years Dr. Bond's health has not been of the best and he has thought it best not to engage in his profession so actively as in the past and now that he has decided to definitely retire his large gift could find no more fit place than in the relief of those who must suffer.—Denison Bulletin.

Dr. Robert E. Jameson has been confined in the Mercy Hospital since April 15 with duodenal ulcer. Dr. O. A. Dahms and Dr. William G. Bessmer did a gastroenterostomy. Dr. Jameson is doing fine and will leave the hospital about May 10 and will be back in his practice about May 15.

Dr. J. M. Cadwallar has moved from Calumet to Durant, where he will continue his practice of medicine.

Dr. Richard Lucke has located in Jefferson for the practice of medicine. Dr. Lucke is a graduate from the Medical Department of the University of Ne-

braska. Has had one year internship in Louisville and one year in Clarkson Hospital, Omaha.

Dr. A. A. Rhonalt, formerly of Ringsted, has located at Cedar Falls. Dr. Rhonalt is a graduate from Creighton University, Omaha, class of 1914. Intern Santa Fe Railway Hospital at Topeka, Kansas, and has attended lectures in several European and American hospitals.

MEDICAL NEWS NOTES

Dr. Hans Haumeder, internist at the Ortner Clinic in Vienna, Austria, has come to New Hampton to engage in the practice of his profession. He will work in the offices of Drs. Schilling, Gardner and McGrane and also in St. Joseph's Hospital. His practice will be that of a consultant exclusively. Dr. Haumeder graduated from the Old Medical University of Vienna in 1913. He served in an Austrian medical unit almost five years in the war, being located most of that time in Albania. At the conclusion of the war he returned to Vienna and since then has been in the Ortner Clinic. He was about to accept a professorship in Vienna, when a letter from America, sent him by one of the professors of Marquette University, Milwaukee, reached him, telling him of New Hampton's need and introducing Dr. Nicholas Schilling. Correspondence completed the negotiations.

Dr. H. R. Irish, March 29, observed the fortieth anniversary of his practice in Forest City. Upon graduating from the medical department of the State University of Michigan, he came to Forest City where he opened his office and here he has remained ever since. Through constant reading and study Dr. Irish has kept in touch with the trend of modern scientific investigation and discovery, and is one of the leading physicians and surgeons of Winnebago and surrounding counties, having built up one of the largest private practices in northern Iowa. He is also surgeon for the Rock Island Railway.

Waverly, Iowa, April 26, 1923.

Dr. D. S. Fairchild,

Clinton, Iowa:

Dear Doctor:

Just a word to let you know that I have returned from my South American trip with the American College of Surgeons. This was a wonderful trip from many points of view. I want to say that our visit in Panama was made much more delightful because of the fact that Dave put in the day with us and through his courtesy and attention the pleasure of our trip there was very much increased. It sure seemed fine to have him meet us at the dock.

While in Panama we were present at the laying of the cornerstone services of the Gorgas Memorial. If I had the time I would like to say something about the far-reaching benefits that have accrued from the work of this wonderful physician. The influence and

result of his devotion to sanitary medicine in the tropics extends all through the countries of South America and the good this is doing in the way of saving lives and permitting otherwise uninhabitable countries to become veritable paradises is impossible to calculate.

We were delightfully received by the medical profession of the various countries we visited and were surprised many times to find such well equipped and such able and scientific men. Among the places of special interest was the Oswaldo Cruz Institute of Rio de Janeiro, the Snake farm and the institute at Sao Paulo and the wonderful medical school building and equipment at Rio de Janeiro. Two new hospitals have just been built at Montevideo that are marvels of architecture and lack nothing in the way of operating rooms and other facilities of a modern hospital. These new hospitals were the only ones we saw that were equipped with screens for the windows and doors.

The greatest drawback to surgeons in South America is the almost absolute absence of nurses. However, in Buenos Aires and Montevideo a start was made during the last year to develop a nurses training school. The reason of this lack of nurses is found in social systems of these countries.

All in all this was a most wonderful trip and I am sure that a closer relationship between the members of the profession of South America, United States and Canada will be the result of this trip of the American College of Surgeons.

Now Doctor this letter is purely personal and is written because I wanted to tell you that we had met Dave and found him the same genial, delightful companion we knew him to be in Iowa. That he added much to our pleasure personally and to others of our party.

With kindest personal regards, I am,

Yours sincerely,

W. A. Rohlf, M.D.

An Act for the Promotion of the Welfare and Hygiene of Maternity and Infancy, and for Other Purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there is hereby authorized to be appropriated annually, out of any money in the treasury not otherwise appropriated, the sums specified in section 2 of this Act, to be paid to the several states for the purpose of cooperating with them in promoting the welfare and hygiene of maternity and infancy as hereinafter provided.

Sec. 2. For the purpose of carrying out the provisions of this Act, there is authorized to be appropriated, out of any money in the treasury not otherwise appropriated, for the current fiscal year \$480,000, to be equally apportioned among the several states, and for each subsequent year, for the period of five years, \$240,000, to be equally apportioned among the several states in the manner hereinafter provided:

Provided, That there is hereby authorized to be appropriated for the use of the states, subject to the provisions of this Act, for the fiscal year ending June 30, 1922, an additional sum of \$1,000,000, and annually thereafter, for the period of five years, an additional sum not to exceed \$1,000,000: Provided further, That the additional appropriations herein authorized shall be apportioned \$5,000 to each state and the balance among the states in the proportion which their population bears to the total population of the states of the United States, according to the last preceding United States census: And provided further, That no payment out of the additional appropriation herein authorized shall be made in any year to any state until an equal sum has been appropriated for that year by the legislature of such state for the maintenance of the services and facilities provided for in this Act.

So much of the amount apportioned to any state for any fiscal year as remains unpaid to such state at the close thereof shall be available for expenditures in that state until the close of the succeeding fiscal year.

Sec. 3. There is hereby created a board of maternity and infant hygiene, which shall consist of the Chief of the Children's Bureau, the Surgeon General of the United States Public Health Service, and the United States Commissioner of Education, and which is hereafter designated in this Act as the board. The board shall elect its own chairman and perform the duties provided for in this Act.

The Children's Bureau of the Department of Labor shall be charged with the administration of this Act, except as herein otherwise provided, and the Chief of the Children's Bureau shall be the executive officer. It shall be the duty of the Children's Bureau to make or cause to be made such studies, investigations, and reports as will promote the efficient administration of this Act.

Sec. 4. In order to secure the benefits of the appropriations authorized in section 2 of this Act, any state shall, through the legislative authority thereof, accept the provisions of this Act and designate or authorize the creation of a state agency with which the Children's Bureau shall have all necessary powers to cooperate as herein provided in the administration of the provisions of this Act: Provided, That in any state having a child-welfare or child-hygiene division in its state agency of health, the said state agency of health shall administer the provisions of this Act through such divisions. If the legislature of any state has not made provision for accepting the provisions of this Act the governor of such state may in so far as he is authorized to do so by the laws of such state accept the provisions of this Act and designate or create a state agency to cooperate with the Children's Bureau until six months after the adjournment of the first regular session of the legislature in such state following the passage of this Act.

Sec. 5. So much, not to exceed 5 per centum, of the additional appropriations authorized for any

fiscal year under section 2 of this Act, as the Children's Bureau may estimate to be necessary for administering the provisions of this Act, as herein provided, shall be deducted for that purpose, to be available until expended.

Sec. 6. Out of the amounts authorized under section 5 of this Act the Children's Bureau is authorized to employ such assistants, clerks, and other persons in the District of Columbia and elsewhere, to be taken from the eligible lists of the Civil Service Commission, and to purchase such supplies, material, equipment, office fixtures, and apparatus, and to incur such travel and other expense as it may deem necessary for carrying out the purposes of this Act.

Sec. 7. Within sixty days after any appropriation authorized by this Act has been made, the Children's Bureau shall make the apportionment herein provided for and shall certify to the Secretary of the Treasury the amount estimated by the bureau to be necessary for administering the provisions of this Act, and shall certify to the Secretary of the Treasury and to the treasurers of the various states the amount which has been apportioned to each state for the fiscal year for which such appropriation has been made.

Sec. 8. Any state desiring to receive the benefits of this Act shall, by its agency described in section 4, submit to the Children's Bureau detailed plans for carrying out the provisions of this Act within such state, which plans shall be subject to the approval of the board: Provided, That the plans of the states under this Act shall provide that no official, or agent, or representative in carrying out the provisions of this Act shall enter any home or take charge of any child over the objection of the parents, or either of them, or the person standing in loco parentis or having custody of such child. If these plans shall be in conformity with the provisions of this Act and reasonably appropriate and adequate to carry out its purposes they shall be approved by the board and due notice of such approval shall be sent to the state agency by the chief of the Children's Bureau.

Sec. 9. No official, agent, or representative of the Children's Bureau shall by virtue of this Act have any right to enter any home over the objection of the owner thereof, or to take charge of any child over the objection of the parents, or either of them, or of the person standing in loco parentis or having custody of such child. Nothing in this Act shall be construed as limiting the power of a parent or guardian or person standing in loco parentis to determine what treatment or correction shall be provided for a child or the agency or agencies to be employed for such purpose.

Sec. 10. Within sixty days after any appropriation authorized by this Act has been made, and as often thereafter while such appropriation remains unexpended as changed conditions may warrant, the Children's Bureau shall ascertain the amounts that have been appropriated by the legislature of the several states accepting the provisions of this Act and shall certify to the Secretary of the Treasury the amount

to which each state is entitled under the provisions of this Act. Such certificate shall state (1) that the state has, through its legislative authority, accepted the provisions of this Act and designated or authorized the creation of an agency to cooperate with the Children's Bureau, or that the state has otherwise accepted this Act, as provided in section 4 hereof; (2) the fact that the proper agency of the state has submitted to the Children's Bureau detailed plans for carrying out the provisions of this Act, and that such plans have been approved by the board; (3) the amount, if any, that has been appropriated by the legislature of the state for the maintenance of the services and facilities of this Act, as provided in section 2 hereof; and (4) the amount to which the state is entitled under the provisions of this Act. Such certificate, when in conformity with the provisions hereof, shall, until revoked as provided in section 12 hereof, be sufficient authority to the Secretary of the Treasury to make payment to the state in accordance therewith.

Sec. 11. Each state agency cooperating with the Children's Bureau under this Act shall make such reports concerning its operations and expenditures as shall be prescribed or requested by the bureau. The Children's Bureau may, with the approval of the board, and shall, upon request of a majority of the board, withhold any further certificate provided for in section 10 hereof whenever it shall be determined as to any state that the agency thereof has not properly expended the money paid to it or the moneys herein required to be appropriated by such state for the purposes and in accordance with the provisions of this Act. Such certificate may be withheld until such time or upon such conditions as the Children's Bureau, with the approval of the board, may determine; when so withheld the state agency may appeal to the president of the United States who may either affirm or reverse the action of the Bureau with such directions as he shall consider proper: Provided, That before any such certificate shall be withheld from any state, the chairman of the board shall give notice in writing to the authority designated to represent the state, stating specifically wherein said state has failed to comply with the provisions of this Act.

Sec. 12. No portion of any moneys apportioned under this Act for the benefit of the states shall be applied, directly or indirectly, to the purchase, erection, preservation, or repair of any building or buildings or equipment, or for the purchase or rental of any buildings or lands, nor shall any such money or moneys required to be appropriated by any state for the purposes and in accordance with the provisions of this Act be used for the payment of any maternity or infancy pension, stipend, or gratuity.

Sec. 13. The Children's Bureau shall perform the duties assigned to it by this Act under the supervision of the Secretary of Labor, and he shall include in his annual report to Congress a full account of the administration of this Act and expenditures of the moneys herein authorized.

Sec. 14. This Act shall be construed as intending to secure to the various states control of the administration of this Act within their respective states, subject only to the provisions and purposes of this Act.

Approved, November 23, 1921.

An Act to Accept the Provisions and the Benefits of an Act of Congress, Approved on the Twenty-Third Day of November, Nineteen Hundred Twenty-One, Relating to Appropriations to the Several States for the Promotion of the Welfare and Hygiene of Maternity and Infancy, and for Other Purposes; to Designate the State Agency; to Provide for the Proper Custody and Administration of Funds Received by the State from Such Appropriations; and to Make an Appropriation Therefor.

Be It Enacted by the General Assembly of the State of Iowa:

Section 1. That the State of Iowa, through its legislature, hereby accepts the provisions of the Act of Congress, enacted by the Sixty-seventh Congress, approved November 23, 1921, and entitled, "An Act For the promotion of the welfare and hygiene of maternity and infancy, and for other purposes," otherwise known as (Public—No. 97—67th Congress). (S. 1039.)

Sec. 2. That the benefits of all funds appropriated under the provisions of such act are hereby accepted as provided in such act.

Sec. 3. That the State Board of Education is hereby designated as the state agency, provided in such act; and the said State Board of Education is charged with the duty and responsibility of co-operating with the Children's Bureau of the United States Department of Labor in the administration of such act; and is given all power necessary to such operation. The State University of Iowa shall be in actual charge of the work done under this act.

Sec. 4. That the State Treasurer is hereby appointed as custodian of funds, for the promotion of the welfare and hygiene of maternity and infancy as provided in such act; and he is charged with the duty and responsibility of receiving and providing for the proper custody and disbursement of vouchers drawn by such State Board of Education, of moneys paid to the state from the appropriation made under the provisions of such act, and of such funds as are appropriated by the state to secure such appropriations from the Federal Government.

Sec. 5. That the State Treasurer, as custodian of the funds for the promotion of the welfare and hygiene of maternity and infancy, shall make to the General Assembly, at each biennial session thereof, a report of the receipts and disbursements of moneys received by him under the provisions of such act; and such State Board of Education shall make to the General Assembly, at each biennial ses-

sion thereof, a report of its administration of such act.

Sec. 6. That there is hereby appropriated, out of the money in the State Treasury not otherwise appropriated, the sum of twenty-one thousand, two hundred thirteen dollars and sixty cents (\$21,213.60), which shall be available immediately upon the passage of this act; and the sum of twenty-one thousand, two hundred thirteen dollars and sixty cents (\$21,213.60) annually hereafter, beginning July 1, 1923, for the promotion of the welfare and hygiene of maternity and infancy, so long as the provisions of the Act of Congress named in Section 1 of this act shall remain in force.

Sec. 7. No official, agent, or representative of the division of maternity and infant hygiene shall by virtue of this act have any right to enter any home over the objection of the owner thereof, or to take charge of any child over the objection of the parents, or either of them, or of the person standing in loco parentis or having custody of such child. Nothing in this act shall be construed as limiting the power of a parent or guardian or person standing in loco parentis to determine what treatment or correction shall be provided for a child or the agency or agencies to be employed for such purpose.

Section 8. This act, being deemed of immediate importance, shall take effect and be in force from and after its publication in the Des Moines Register and the Des Moines Capital, newspapers published in Des Moines, Iowa.

Approved April 2, 1923.

NOTICE OF EXAMINATION

For Entrance into the Regular Corps of the United States Public Health Service

Examinations of candidates for entrance into the Regular Corps of the U. S. Public Health Service will be held at the following named places on the dates specified: At Washington, D. C., July 9, 1923. At Chicago Illinois, July 9, 1923. At San Francisco, California, July 9, 1923.

Candidates must be not less than twenty-three nor more than thirty-two years of age, and they must have been graduated in medicine at some reputable medical college, and have had one year's hospital experience or two years' professional practice. They must pass satisfactorily, oral, written, and clinical tests before a board of medical officers and undergo a physical examination.

Successful candidates will be recommended for appointment by the president with the advice and consent of the senate.

Requests for information or permission to take this examination should be addressed to the Surgeon General, U. S. Public Health Service, Washington, D. C.—H. S. Cumming, Surgeon General.

HOSPITAL NEWS

The Webster County Medical Society in regular meeting held Tuesday evening, March 20, 1923, endorse and promise their material support to the Mercy Hospital campaign to raise funds sufficient to increase the facilities of the hospital by fifty beds. It being understood that the sum needed for such increase be in the neighborhood of \$150,000. Also, if in the near future any other movement to increase the facilities is promulgated here we likewise pledge our support to such movement.

Transfer of St. Joseph's Mercy Hospital, Sioux City at Twenty-first and Court streets to the nurses' home, immediately north of the institution, addition of 100 private rooms for patients, interior remodeling of both buildings and construction of other improvements at an entire cost of approximately \$250,000 is the program of the hospital management, according to plans announced.

MARRIAGES

Dr. N. C. Stam was recently married to Miss Marguerite Reichwine of Chicago, Illinois. Dr. Stam is a member of the Park Hospital Clinic, Mason City, Iowa.

OBITUARY

Dr. A. C. Landes died at his home in Brooklyn, Iowa, April 3, 1923.

He was born in Green Castle, Indiana. At the age of six years he came with his parents to Davis county, Iowa. Received preliminary education at Trop Academy and graduated from the Medical Department of Iowa University at Iowa City. Later attended medical lectures at Keokuk.

Dr. Landes first practiced medicine at Hopeville, Clark county, and about thirty years ago located in Brooklyn. On account of failing health, retired from practice four years ago.

Resolution of Sympathy for the Death of Chas. W. Blake, M.D.

The Greene County Medical Society, through its committee, deplores and regrets the death of one of its members, Chas. W. Blake, M.D.

Dr. Blake was born at Jefferson, Iowa, November 2, 1874. He was graduated from the public schools, and later from the Medical Department of Iowa University in 1898. He practiced for one year at Churdan, Iowa, and the balance of his years in Jefferson, Iowa. Special work was done in Boston and New York.

Dr. Blake has served as secretary of the Medical Society for a number of years, and acted as county physician for several years, and coroner of Greene County six years.

In his practice he was the genial family physician, and the sorrow expressed by our community shows the esteem in which he was held.

The members of the Medical Society extend their sympathy to his brothers and sisters, other near relatives, and to his patients.

A copy of these expressions, in accordance with resolutions passed at a special meeting of the society April 27, 1923, shall be entered in the minutes of the Society, published in the daily papers, and sent to his bereaved relatives.

Respectfully signed,
F. M. Dean, M.D.,
J. R. Black, M.D.,
Ben C. Hamilton, Jr., M.D.,
Committee.

Dr. George M. Luckey of Vinton died at his home Tuesday, April 3, 1923, from apoplexy.

Dr. Luckey was born at Canton, Illinois, June 9, 1874. He was a graduate of Knox College, Galesburg, Illinois, and from Rush Medical College.

Dr. Luckey, after receiving his medical degree, practiced five years in Shellsburg and then moved to Vinton, where he entered into partnership with his brother Dr. J. E. Luckey, with whom he practiced fifteen years. Drs. J. E. and G. M. Luckey were well known as able and successful practitioners of medicine.

Dr. Dwight Satterlee of Dunlap died at his home April 4, 1923, at the age of eighty-six years.

Dr. Satterlee served in the medical corps of the Union Army during the Civil War as a major. He volunteered in the 11th Connecticut Regiment early in the Civil War and near the close of the war was placed in charge of a hospital at Richmond, Virginia.

William L. Bogan was born in Warrick county, Indiana, March 28, 1832, and died at his home in Hamburg on April 3, 1923, aged ninety-one years and six days. His father was a soldier of the Revolutionary War. He spent his youthful days in Indiana, and after acquiring an academic education he entered Asbury University, where he completed his literary education. He studied medicine under Dr. J. B. Tillman of Warrick county, Indiana, and later on graduated from the Iowa State University at Keokuk, Iowa, with the class of 1858, winning high honors. He opened an office in Lynnville, Indiana, where he remained until the Civil War. He raised a company which joined the 91st Indiana Infantry, of which he was elected captain.

He served for some time in active field duty and later on was assigned as assistant surgeon, but was later obliged to give this up on account of paralysis, which was in 1864, and from which he never fully recovered. Returning to his home he resumed his practice, and in 1868 removed to Montevallo, Missouri, remaining four years, and in 1872 coming to Hamburg, where he took front rank among the early practitioners for forty-four years.

Dr. Frederick Becker, former president of the Homeopathic Medical Association of Iowa, member of the state board of health and a pioneer Iowa physician, passed away recently at the age of eighty-five.

He was born in Guttenburg, Germany, in 1838, the son of George and Elizabeth Becker. His father, for many years proprietor of a large estate, was educated for the ministry at Marburg University, but he abandoned his studies upon the death of his father. He served under the German banner during the Napoleonic wars in 1813-14.

The son attended public schools in Germany and came to America in 1852. He began studying medicine at a Cleveland College and entered a Missouri college in 1874.

After receiving his degree he moved to Taylorville, Fayette county, and later went to Clermont where he practiced until his wife died in 1896.

Dr. Becker was married in 1859 to Sophia Miller, a native of Germany. Three children were born, all of whom are still living. They are Carl F., George A. and Frederick J.

Dr. Hugh Livingston died at his home in Hopkinton, March 10, 1923. He was born near Hopkinton, October 5, 1846. Graduated from Rush Medical College in 1890 and practiced medicine in Hopkinton until the time of his death.

Dr. J. B. Van Amberg died at his home in Charles City, March 25, 1923, at the age of eighty-three years.

Dr. D. J. Chinn of Bettendorf, died at his home March 31, 1923, at the age of seventy-four years.

Dr. Chinn practiced in Bettendorf twenty-one years.

Dr. Alfred O. Strout died at his home in Parkersburg February 13, 1923, of pneumonia, at the age of seventy-four years.

Dr. Strout had practiced medicine in Parkersburg for more than forty years.

Dr. Thomas MacFarlane, aged seventy-nine, died at his home in Mondamin April 13 as the result of pneumonia. He was a Civil War veteran, a resident of Harrison county forty-five years, a practicing physician and druggist of Mondamin forty-two years.

Dr. Horace M. Stanley died Saturday evening, April 14, at 8:30 o'clock at the family home, 607 West Adams street, following an illness of several years.

Dr. Stanley was forty-three years and twenty-one days of age and has been among the prominent physicians of the city for the past years.

BOOK REVIEWS

REGIONAL ANESTHESIA

By Gaston Labat, M.D., Lecturer on Regional Anesthesia at the New York University; Laureate of the Faculty of Sciences, University of Montpellier; Laureate of the Faculty of Medicine, University of Paris; Formerly Special Lecturer on Regional Anesthesia, The Mayo Foundation, University of Minnesota. With Foreword by W. J. Mayo, M.D.; Octavo of 496 Pages, with 315 Original Illustrations. W. B. Saunders Company, 1922. Cloth \$7.00 Net.

The importance of Regional Anesthesia in surgery has attained a degree that demands an authoritative work on the subject and Dr. Labat has furnished it in this volume. Dr. Labat has enjoyed unusual opportunities in testing the value of this method. Other surgeons have done important work in this direction, but we now have an opportunity to study the method of application in a systematic manner.

The first chapter relates to the method, which is described in considerable detail, and is of first importance. Following in chapter two is the general principles of technic. Chapter three presents the method of Blocking of Cranial Nerves, filled with technical difficulties which can be overcome by painstaking care. Chapter four relates to operations on the scalp and face and head. The anatomical points where nerves can be reached and blocked are presented by means of numerous cuts. In referring to the nasal cavities, cocaine has certain advantages, according to the author, but must be used with care. It is stated that the addition of Adrenaline to novocain solutions will do as well.

The blocking of the spinal nerves occupies considerable space and by a consideration of the important nerves distributed to the several parts, any operation on the body may be satisfactorily performed. In the neck, nerve blocking is recommended in operations on the thyroid vessels and gland, operations on the trachea and larynx, excision of the lymphatic glands of the neck and other operations as ligation, carotid and lingual arteries and brachial cysts. In operations on the upper air passages it is necessary to abolish the irritability of the mucosa and prevent coughing by intertracheal or interlaryngeal instillation of a strong solution of cocaine.

The author points out the method of nerve blocking in operations on the upper extremities and amputations and excisions. In operations on the thorax by combined nerve blocking and infiltration. In operations on the abdomen certain special considerations are presented, including pathological conditions. A chapter is devoted to operations on the lower extremities. It is stated, that unlike nerve blocking in the upper extremities, the nerves in the lower extremities must be injected individually, therefore high amputation of the thigh or disartic-

ulation of the hip, spinal anesthesia may be performed.

The purpose of this book is to consider regional nerve block, in the vast majority of surgical operations, but a supplementary chapter is given to intraspinal block or spinal anesthesia, which the author prefers to general anesthesia. The agents recommended are novocain, stovain or tropacocain. There are some admitted dangers which are attributed to faulty technic or lack of experience, but with proper technic and the use of novocain, the danger is small. However, the writer would prefer general anesthesia except in selected cases.

Every surgeon, regardless of predilection, should consider this book of great value and study it carefully.

THE SURGICAL CLINICS OF NORTH AMERICA

No. 5, Volume II; Southern Number. W. B. Saunders & Company.

This number represents the work of a number of southern surgeons. The first is a series of clinics by Rudolph Matas at the Charity Hospital and Touro Infirmary at New Orleans. At the latter institution was presented a case of Arteriovenous Fistula of the Femoral Vessels in which the Matas methods were discussed. At the St. Thomas Hospital, Nashville, an interesting clinic was presented by Dr. William D. Haggard. Dr. J. Shelton Horsly at St. Elizabeth Hospital, Richmond, held a rather extensive clinic, including a number of important cases. Also at St. Luke's, Dr. Stuart McGuire presented several interesting cases. Important clinics were held by other southern surgeons, including Dr. Hubert A. Royster of Raleigh, North Carolina; Dr. F. W. Parham of New Orleans, and also in other southern cities.

This number fairly represents southern surgery, which does not lack in interest and is equal to the best.

PREMATURE AND CONGENITALLY DISEASED INFANTS

By Julius H. Hess, M.D., Professor and Head of the Division of Pediatrics, University of Illinois College of Medicine, Chief of Pediatric Staff Cook County Hospital, Attending Pediatrician to Cook County and Other Hospitals. Illustrated with 189 Engravings. Lea and Febiger, 1922.

This book is an important contribution to a subject not generally considered in a systematic way. Many observations have been made and many papers written, but this is the first attempt so far as we know, to gather data and present conditions touching premature birth, and of diseases leading to this accident, particularly referring to the preservation of the lives of the prematurely born.

In France, more attention is given to the subject, and now that we are preparing to give more attention to maternity cases, the book is opportune.

A portion of the book is given to certain general diseases of the mother which may provoke premature birth, and to general diseases which may lessen the chance of the premature infant surviving. Of course the most important considerations are given to questions relating to preserving the life of the infant that has but a small margin of strength. When premature birth is apparently inevitable, the mother and infant should have, as far as possible, the advantage of a well ordered hospital with skilled attendants. If a premature birth occurs in the patient's home, the risk is vastly increased. We would emphatically advise the family doctor to read this book with care, he will certainly gain great advantage.

PULMONARY TUBERCULOSIS

By Maurice Fishberg, M.D.; Clinical Professor of Medicine, University and Bellevue Hospital Medical College; Chief of the Tuberculosis Service, Montefiore Hospital for Chronic Diseases and of Bedford Hill Sanatorium for Incipient Tuberculosis. Third Edition, Revised and Enlarged; Illustrated with 129 Engravings and 28 Plates. Lea and Febiger. Philadelphia and New York.

Two editions have been exhausted in five years and the author now presents a third edition with certain changes, which renders the book more valuable and gives opportunity to revise some of the observations of a later date.

The ordinary questions relating to the nature of the infection, diagnosis, prognosis and treatment are set forth in a clear and concise manner. But there are questions of much importance that have been considered in late years that have modified our views in relation to tuberculosis that are set forth in this book.

In chapter five, under the head: The Phenomena of Immunity, is a valuable discussion of fundamental facts. It has been difficult to account for certain observations under the older conception of the spread of tuberculosis. It was believed that the disease could be prevented by isolation and the separation of those infected from the healthy and we were advised that the disappearance of tuberculosis was near at hand. In recent days immunity has been the basis of study. The observations of Adami on the Indian children educated in Montreal developing the disease after returning to the exposure and hardship of Indian life, and other observations of a similar character, seemed to show that infection occurred in childhood. The observation that in communities free from tuberculosis the introduction of infection spread with great violence, and on the other hand where tuberculosis was common it prevailed in milder form and more amenable to treatment. This led to new studies including infection in childhood

and of immunity. It was found that a material reduction in the death rate from tuberculosis occurred before the anti-tuberculosis crusade began and that immunity was the probable important factor.

Chapter three should be carefully studied.

Chapter thirty-two, The Medico-Legal and Insurance Aspects of Tuberculosis, is of great value as setting forth extremely important facts in relation to the effect of trauma in producing tuberculosis and the relation of tuberculosis to industry.

This book of 891 pages should be in the hands of every practicing physician who desires to keep in line with the most recent facts in relation to tuberculosis.

PHYSIOLOGY AND BIOCHEMISTRY IN MODERN MEDICINE

By J. J. R. Macleod, M.D., Professor of Physiology in the University of Toronto, Canada; Formerly Professor of Physiology in the Western Reserve University, Cleveland, Ohio. Assisted by Roy G. Pearce, A. C. Redfield, and N. B. Taylor and by Others. Fourth Edition, with 243 Illustrations, Including 9 Plates in Colors. Price, \$11.00. C. V. Mosby, St. Louis, Missouri, 1922.

This exceedingly valuable book of 922 pages, with the opening statement in the preface that "the opportunity has been taken in this edition to revise each chapter so as to incorporate as much as possible of what has been added to physiological knowledge during the past two years." This is an important statement coming from an author so jealous of his reputation as is Professor Macleod. The English School of Medicine, of which Professor Macleod is a representative, has always placed great stress on studies in anatomy and physiology, and the contributions of English physiologists have been of the highest order.

The additional title of Biochemistry indicates what has come to pass in physiology in recent years. The term physiology in the days of Michael Forster indicated the functions of the various organs of the body before the fundamental studies in organic chemistry had reached the fruitful stage of the present day. To consider the functions of the respiratory system, the muscles, or the urinary system for instance, without reference to chemistry would fail fundamentally to give a true conception of the physiology of these systems; not only from the standpoint of physiology, but also to scientific and practical medicine. Therefore Physiology and Biochemistry lie at the foundation of medicine. To Professor Macleod should be given great credit for reducing the vast literature on the relations of physiology and biochemistry, to the use of the medical profession in a convenient but necessarily large volume. It is to be sincerely hoped that the medical profession will avail themselves of the contribution laid before them.

THE PRACTICAL MEDICINE SERIES

Comprising Eight Volumes on the Year's Progress in Medicine and Surgery, Under the Editorial Charge of Charles L. Nix, A. M., M.D., Chicago Year Book, Publishers; Volume I, General Medicine \$3.00. For the Eight Volumes \$15.00.

The purpose of this series of volumes is to present to the medical profession a volume each year, being a review of the progress of medical science and practice. It is not made up of brief abstracts, but real papers of sufficient length and detail to give the reader a full discussion of the subject treated.

In this volume are four subjects presented: Infectious Diseases and Endocrinology, by George H. Weaver; Diseases of the Chest, (not including the Heart), by Dr. Lawrason Brown; Diseases of the Blood and Blood-Making Organs; Diseases of the Blood-Vessels, Heart and Kidney, by Robert B. Preble; Diseases of the Digestive System and Metabolism, by Dr. Bertram Sippy, and Dr. Ralph C. Brown.

The other eight volumes are likewise monographs treating of the various branches of medicine, with particular relation to recent work and observation. We do not like the statement that "this volume is particularly adapted to the use of the busy practitioner," which, of course, means that it is a commercial enterprise. As a matter of fact the busy practitioner is the doctor who reads books, and this book should be recognized as one of them.

THE PROPAGANDA FOR REFORM IN PROPRIETARY MEDICINES

Volume II—Part 1. Report of the Council.
Part 2. Contributions from the Laboratory.
Part 3. Journal Contributions; Proprietary Products. Part 4. Journal Contributions; Miscellany. Press of American Medical Association, Chicago.

The present volume contains material covering the period from January, 1917 to April, 1922, inclusive.

Readers of the Journal of the American Medical Association are familiar with the immense work the Journal has undertaken in furnishing information regarding the great number of proprietary medicines which have been offered the medical profession. Through the Council on Pharmacy and Chemistry investigations have been made and claims inquired into, thus fixing the real value of the medicine offered. It has involved a great amount of labor and expense and no little courage to fairly present the claims and the findings, thus protecting the great body of the medical profession against fraud, and the public as well. The Journal has in these volumes gathered the mass of propaganda, published weekly in the Journal, in a book for the convenience of the profession. Through this volume every practitioner of medicine or layman may inform himself of the claims and merits of all these new remedies and nostrums from an authoritative source.

The Journal of the Iowa State Medical Society

VOL. XIII

DES MOINES, IOWA, JULY 15, 1923

No. 7

SOME VARIATIONS IN THE THORACIC CONTENT AS OBSERVED IN THE ANATOMICAL LABORATOR- IES OF THE STATE UNIVERSITY

HENRY J. PRENTISS, M.D., Iowa City

Mr. Chairman, Ladies and Gentlemen:

In being given this opportunity of presenting a paper, naturally a pure laboratory man has to cast about to decide what will be helpful to the general practitioner and yet not go out of the field of the essayist. Last November I had the opportunity and pleasure of listening to Dr. Christian before the Tri-State District Medical Society, at Milwaukee, Wisconsin. He was quite insistent,

and I have made a study of that, because it so beautifully shows visceral malposition due to mechanical causes.

Also I have called to your attention a few cases, because the time limit would not permit a complete report. I have also asked Dr. Walter Biering to discuss my paper, because being an intern-

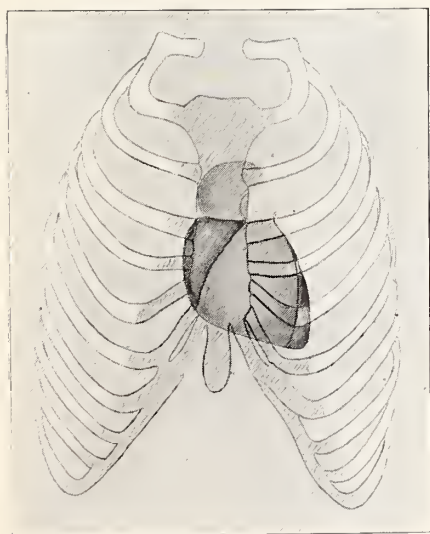


Figure 1

warning the doctors, not to mistake the normal heart, though abnormally placed, for a pathologic condition.

I have therefore taken for my subject normal variations in the thorax, as I have found them in the laboratories of the State University of Iowa. I have thrown out of consideration all pathologic conditions, excepting one, the last of the series;

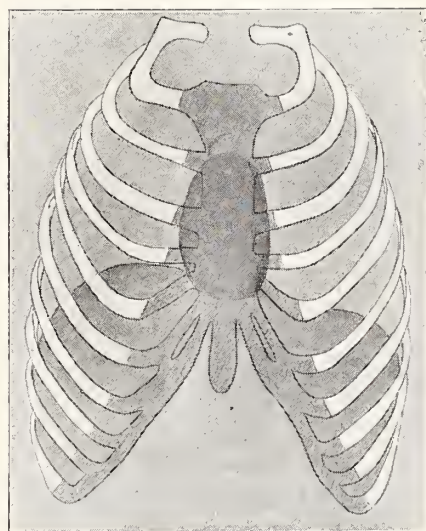


Figure 2

ist, he will indicate the significance of my findings to the general practitioner. I especially am pleased that he has so kindly consented because anatomists are sometimes reproached with the statement that they only teach surgical anatomy, and I trust Dr. Biering will prove my paper, to the contrary, of especial interest to the general practitioner.

Lastly, I wish to say that these plates presented for your consideration are reproductions of sketches made by myself in my laboratory with the date and my signature attached, so that there can be no question as to their correctness other than doubting the author. Even this question might be settled in many cases, for I have jotted down the name of the student or students, on whose cadaver, the variation was found. This last point is somewhat recent to protect my findings.

*Presented at the Seventy-First Annual Session, Iowa State Medical Society, Des Moines, Iowa, May 10, 11, 12, 1922.

With this preamble my paper is simply calling your attention to the series of plates I now present.

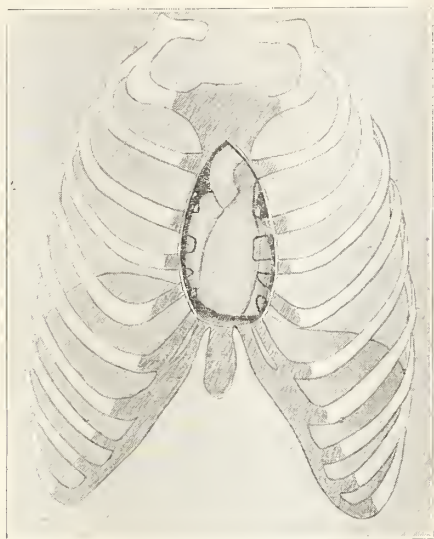


Figure 3

Figure 1 is a picture of the heart in the usual position and requires no comment.

Figure 2 represents a pericardium, centrally and symmetrically placed. This specimen was particularly interesting, because the lungs were almost a pale yellow in color, showing no anthra-

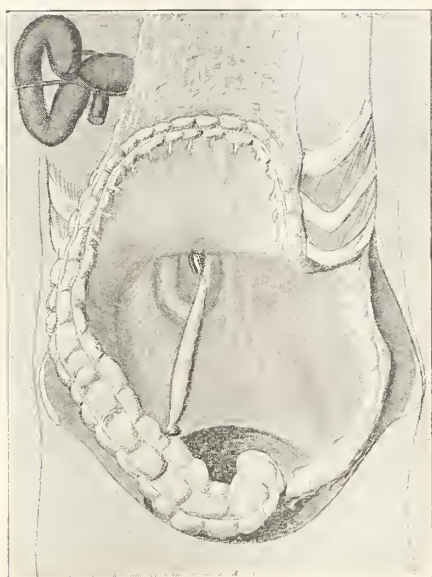


Figure 4

cosis and there were no adhesions whatever in the pleura. I wish to say that in making my studies, I blew up the abdomen so that the diaphragm shows its proper position; I also blew up the pericardium and the right heart via the superior vena cava, so that no collapse is present. In other words, I try to simulate the condition to be found in the living.

Figure 3 shows the pericardium opened and the heart exposed. Note that the apex is at the left sixth costo-sternal junction. The professor of pathology examined the specimen and reported no pathology. Therefore, this is a normal specimen but with the apex at the left sixth costo-sternal

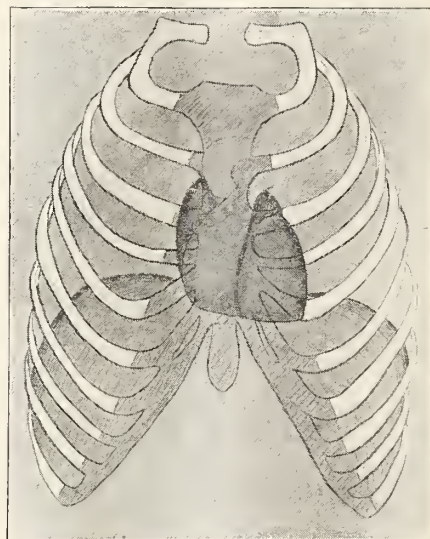


Figure 5

junction. The anterior atrioventricular sulcus, running from the midsternal line opposite the second intercostal space, downward and to the right terminating at the right sixth costo-sternal junction. Therefore the heart valves shifted to the right, with, therefore, a variation in valve sound conduction.

Figure 4 is interpolated to show, what is frequently the case, that if a variation is found in

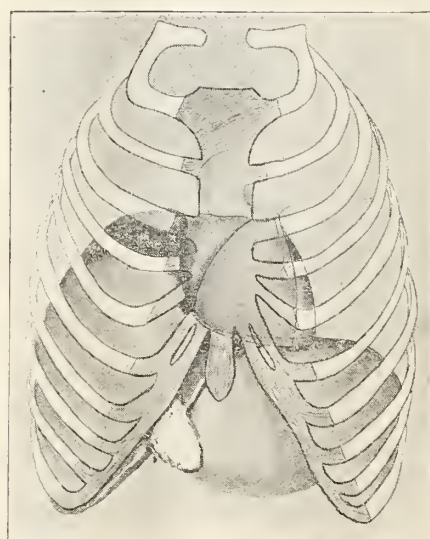


Figure 6

one place, a variation occurs elsewhere, or variations.

Here the duodenum remains to the right, the

duodeno-jejunal juncture being to the right of the aorta, which is practically in the midline. Therefore, the mesentery of the small intestine is entirely to the right. Also the caecum is altogether in the true pelvis. The large intestine (ascending

Figure 7

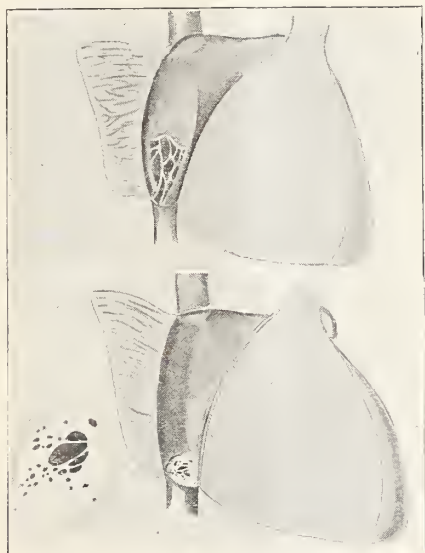


Figure 8

colon) has a mesentery excepting the portion lying in the right iliac fossa.

Figure 5 shows a case where the left dome of the diaphragm reached almost as high as the right. Therefore the heart remained largely in the sulcus between the two domes of the diaphragm. Therefore the apex of the heart reaches to the left fifth costo-chondral juncture instead of the fifth inter-

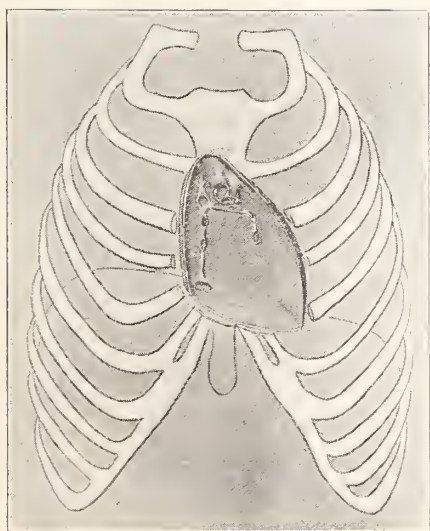


Figure 9

space. The anterior atrioventricular sulcus started above in the median line opposite the second interspace and disappeared before reaching

the inferior sharp border in front. The left ventricle shows therefore very much ventrally as also, the left atrial appendix. The right ventricle

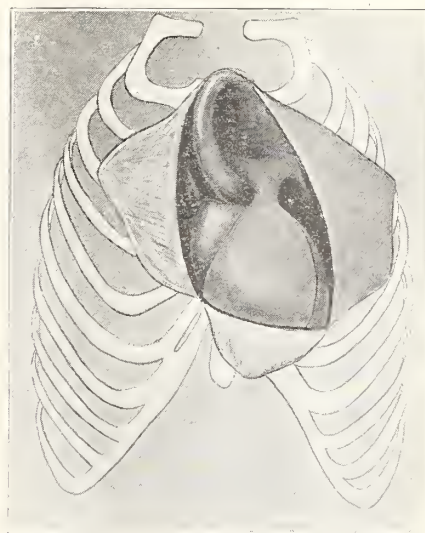


Figure 10

reaches about a centimeter to the right of the right edge of the sternum and therefore the right ventricle is located behind the sternum excepting the right limit.

Figure 6 is interesting because the right dome of the diaphragm reaches to the upper border of the right third rib, or to the second right inter-

Figure 11

Figure 12

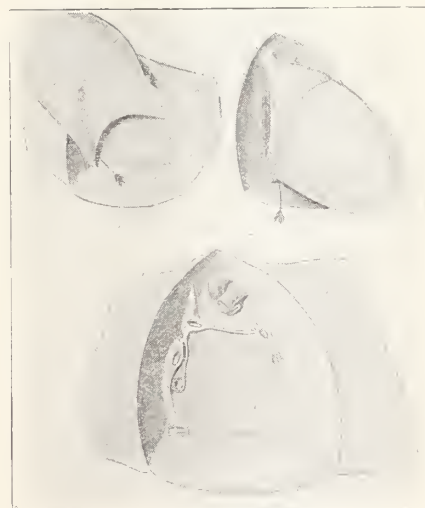


Figure 13

space. This dome turned abruptly down so that the right blunt border of the heart rested against it. The liver as the diagram shows, practically entirely occupied this right cupola, barely reaching to the left of the median line. This condition might be mistaken for an enlarged heart.

Figures 7 and 8 show two interesting valves guarding the inferior vena cava.

Figure 7 shows a delicate tracery attached to the ventral lip of the caval opening and from a rather prominent Eustachian valve on the left to the limbus of the fossa ovalis on the right.

Figure 14

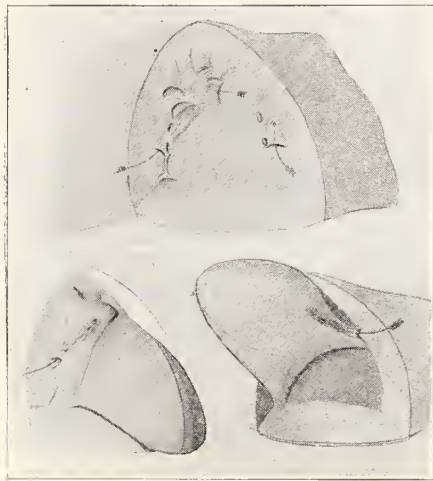


Figure 15

Figure 16

Figure 8 shows a rather massive valve, attached to the periphery of the vena caval opening, excepting posteriorly. This valve is markedly fenestrated. I submit these two specimens in relation to possible obscure cardiac sounds.

Figure 9 is the usual pericardium, opened ventrally, the heart removed, showing the mesocardial reflection from the parietal pericardium.

Figure 10 is that of an enlarged pericardium, reaching some 15 to 20 millimetres above the first piece of the sternum. The heart was usual,

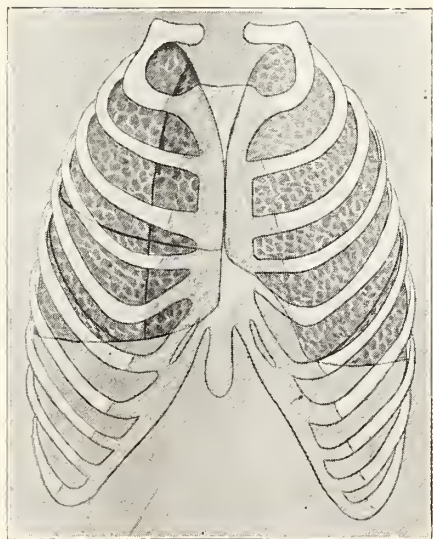


Figure 17

but the arch of the aorta was greatly elongated. We see a number of such pericardii.

Figures 11, 12 and 13 are from the same specimens.

Figure 11 shows the heart rotated, exposing the oblique sinus, and demonstrating a pericardial pocket, as indicated by the arrow. This pocket as further demonstrated in figures 12 and 13, passed cephalad and to the right, between the inferior vena cava and the lower right pulmonary vein; coursing ventral to the right lower pulmonary vein and dorsal to the right upper pulmonary vein and terminates to the right of the mesocardium. This pocket was an index finger in length and about the diameter of this finger.

Its possibilities in a pericarditis, as interfering with return circulation are evident.

Figure 14 shows a pericardium with three of these pockets. One passing behind the right pulmonary veins and terminating at the transverse meocardium; one to the left, dorsal to the left pulmonary veins and a small one in the dorsal wall of the transverse sinus.

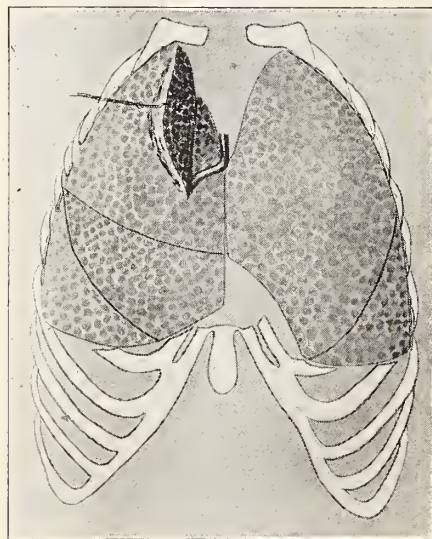


Figure 18

Figure 15 shows a pericardial pocket passing ventral to the lower right pulmonary vein and dorsal to the upper right pulmonary vein. It terminated in a blind end behind the transverse sinus.

Figure 16 shows the same sort of pocket in relation to the left pulmonary veins.

All of these pockets are between the serosa and the fibrosa of the parietal pericardium.

Many variations in pulmonary lobulations are found. In figure 17, I present a case of the upper right lobe being subdivided into sub-lobes by a vertical fissure, which reached to the hilus. It would be interesting to x-ray the bronchial tree in such a case.

Figure 18 shows a curious congenital variation. Evidently as the upper right lobe expanded it split around the right common cardinal vein or

right duct of Cuvier. The result is that we find the azygos major vein passing forward between a small posterior but incomplete lobe and the major portion of the upper right lobe.

An upper right pneumonia would surprise the physician, I should imagine, in the way the

About 2 per cent of our specimens show this persisting.

Figure 20 shows a right subclavian artery pass-

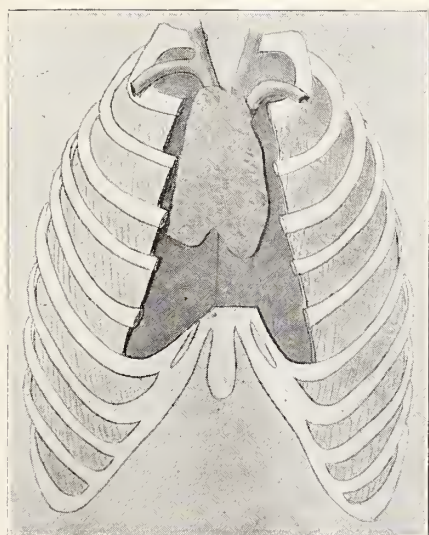


Figure 19

parietal serous circulation would be impaired. Many other variations are found, as for instance, the right lung reaching to the left mammary line, with a corresponding diminution in the size of the left lung.

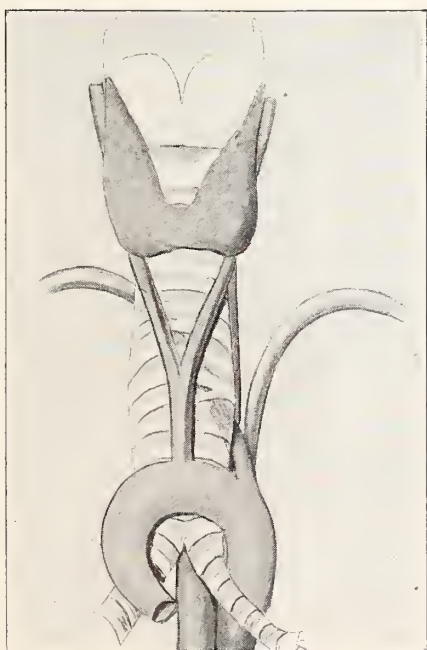


Figure 20

The left lung's anterior border showing no cardiac notch. The left lung presenting two lobes in the upper lobe, etc.

Figure 19 shows a thymus gland in an adult.

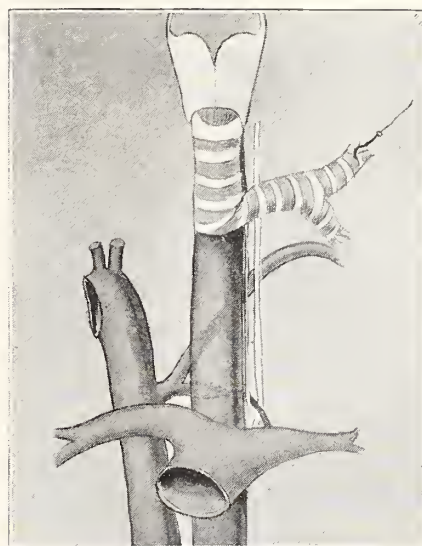


Figure 21

ing from the arch of the aorta to the right between the trachea and the oesophagus. This is rare. It is not uncommon to see a subclavian passing between the oesophagus and the vertebral column.

Figure 22

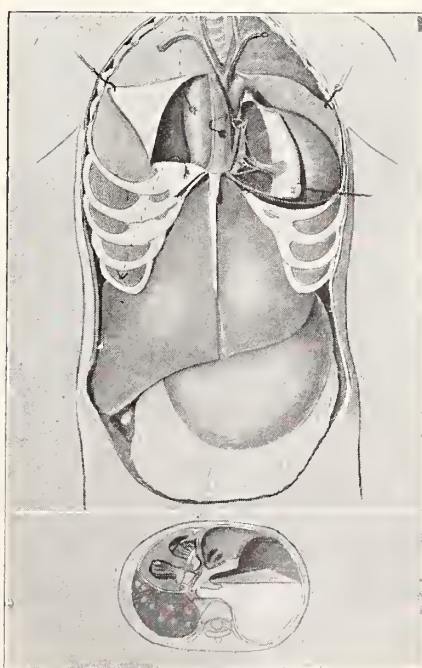


Figure 23

Figure 21 is such a case with an interesting variation that the ligament of the ductus arteriosus passes also behind the oesophagus from the left subclavian and the left vagus passes dorsal to this ligament and the left recurrent laryngeal

passed ventral to this ligament. This completes my paper.

I take the liberty of presenting a specimen of empyema of the right pleural sac with resulting visceral displacement. Figure 22 is a free hand sketch of the entire trunk. Figure 23 is a drawing to size of a cross section, just about the apex of the heart.

A ground glass plate was applied over the section, and a tracing made, which was then transferred to paper and photographed. The drawing is looking caudally. The white is evidently shrunken coagulum, due to the preservation, but it has the appearance of a pneumothorax.

The arrows in figure 22 show that the entire pleural cavity was involved and we note that the diaphragm was displaced so that the liver reached to the right iliac fossa. The stomach and intestines were correspondingly displaced.

The pleural sac was displaced to the left of the left edge of the sternum, with a resulting displacement of the heart. Evidently the mesocardium held so that the left ventricle swung forward. The right atrium was displaced dorsally as well as to the left. The lower left lobe of the lung was thrust entirely posteriorly, only the upper lobe showing ventrally. The right lung was entirely compressed and we note that the fluid pushed to the left displacing the œsophagus to the left of the descending aorta, and the aorta well to the left of the vertebrae.

Discussion

Dr. Walter L. Bierring, Des Moines—I am sure we have all appreciated these interesting suggestions relative to anatomical anomalies and their relation to the present methods of clinical diagnosis. In regard to the heart placed as it was in the first picture, almost in the mid-line, we can readily see how difficult it would be in such an instance to determine abnormalities in size, changes in the location of valvular sounds. In the second picture, where the left ventricle comes to the fore and is specially prominent, we can again see the difficulties in actually determining hypertrophy of that ventricle or its normal size. Again, in that peculiarly high placed liver which arched up the right diaphragm so that it was almost level with the base of the heart, we can see what difficulties the roentgenologist would have in differentiating that picture from an abnormal condition where he depends so much on the arching of the diaphragm and the difference in the two sides. Then, too, how difficult it would be to determine any changes in that heart, lying low down without any definite boundaries of its own that could be determined by physical examination. Then, that interesting specimen with the high-arched aorta bringing the pericardium away up to the border of the sternum and the clavicle—how much that pericardium

and the aorta area must have been widened out by the high-arched pericardial sac. Perhaps the most interesting contribution of all is the specimen with sacs or pockets in the pericardium. In the case of the pocket located behind or in front of the pulmonary veins, we can see, as this filled with fluid and became distended, what interesting pressure murmurs could be produced along the pulmonary veins and also with the pulmonary valve. Again, we may recognize how these could be distended and changes occur in cases of pericarditis which would be very confusing in diagnosis. One can visualize how they could press upon the vena cava or the heart itself and further influence cardiac sounds or murmurs. I wonder sometimes what effect such a condition would have on our electrocardiogram studies. So far evidently we have no way of detecting these changes ante-mortem. Another specimen illustrated interesting changes in the lobulation of the lungs. The essayist showed an example of the presence of four right lobes. Think of the interesting anomaly of an accessory lobe extending to the spinal column and sort of divided off from the upper lobe, particularly by the azygos vein, and its effect upon pathologic conditions. We know that the azygos vein drains from the pleura and upper peritoneum. Any infiltration, pneumonic or otherwise, or a pleuritic exudate producing pressure on the right phrenic as it is distributed to the upper surface of the diaphragm, the liver and upper peritoneum, and we can imagine what confusing symptoms might arise. In the enlargement or persistence of the thymus gland as illustrated here, we can see what difficulties this would cause both in roentgenological studies as well as in physical diagnosis. Again, we must recognize its influence upon the lymphatic structures, upon the blood making structures, and possibly the development of symptoms of status lymphaticus, a condition associated with enlarged thymus gland. Lastly, the peculiar location of the patent ductus arteriosus, placed between the two bifurcations of the pneumogastric, could be most confusing in explaining abnormal changes in heart rate or rhythm and other cardiac disturbances. Altogether this has been a most interesting and instructive contribution to medical diagnosis.

Dr. William Jepson, Sioux City—This paper is of great interest, not only to the internist, but also to those of us who do surgery because of the fact that it calls to mind the frequent existence of anomalies which become a source of great difficulty to us in meeting conditions surgically; as, for example, where we have a kidney abnormally displaced in the pelvis and it becomes the seat of pyonephrosis. That is a topic I do not want to discuss except to state that in one of the cases there existed what probably would have termed a diaphragmatic hernia on the right side had it not been that the liver being large enough to acquire sufficient support laterally prevented it being sucked up into the pleural cavity. That is probably the explanation of the fact that the left lobe

of the liver occupied the high position it did. I wish to briefly describe a case that came under my observation in a base hospital. A young man apparently in normal health, fairly well educated and I think a bookkeeper, was a sergeant in the service, having of course passed the necessary medical examination for entrance. In the course of time he developed an influenza, was transferred to the base hospital and developed a pneumonia of which he died. The following is the condition that was found post-mortem. I want to say, by the way, that prior to death an exploration with an exploring needle had been made upon the left side, a small amount of yellow fluid being removed. This was not examined. On post-mortem this is what we found: All of his small intestines except the duodenum and seven or eight inches of jejunum had been sucked up into the left pleural cavity as well as the ascending and transverse colon so that about one-half of the appendix was yet in the abdominal cavity. Aside from the liver, spleen, stomach and descending colon, there was nothing in his abdominal cavity.

Dr. Prentiss—Dr. Jepson asked me before he discussed this paper if I had ever seen a thoracic hernia of abdominal viscera. I have not, though I have made a number of pictures of imperfections in the diaphragm; which, as Dr. Jepson has pointed out, had been sealed in and we had protrusion of the liver substance up into the thorax, but effectually walling off the thorax from the viscera, thus preventing protrusion from passing up into the thorax.

DIAGNOSIS IN THE RIGHT UPPER QUADRANT*

JUDD C. SHELLITO, M.D., Independence

One of our leading surgeons is quoted as remarking "that when there is trouble in the right upper quadrant only a laparotomy will reveal the exact cause of the trouble." To a degree this may be true. But it is worthy of note that this same surgeon, before performing said laparotomy carefully reviews all that a most elaborate diagnostic staff has been able to discover. (Nor do all cases of difficulty in the right upper quadrant come to laparotomy, nor does this procedure of laparotomy always reveal the pathology at fault. It is a dull day for the internist when he is not called upon to exclude trouble in this region and at times he spends long hours, much thought, and exhausts all his diagnostic armamentarium in merely attaining to an "impression.")

The last few years have seen an immense amount of work and a very considerable advance in this field, and a brief review of the matter may not be amiss.

In the first place, the anatomy of this region is enormously complicated, and much confused by the complex embryology of the various organs. The structures may be grouped for purposes of study into six groups:

1. Hepatic group.—Liver, gall-bladder, bile ducts, pancreas, and for convenience the peritoneum.

2. Gastrointestinal—Stomach, duodenum, small intestine ascending colon, hepatic flexure, and occasionally the appendix and omentum.

3. Renal—Right kidney, its ureter and right suprarenal body.

4. Skeletal—Spine, ribs and costal cartilage.

5. Pulmonary—Right lung, pleura and diaphragm.

6. Accessory—Nerves, blood-vessels, lymphatics and muscles.

Each group, I might say each organ, has its distinctive pathology, and for each group more or less special methods have been evolved for their examination. To consider each pathological condition in each group would require volumes. But the diagnostician should have in mind at least the commoner, as a basis from which to depart.

In the hepatic group we have cholelithiasis, cholecystitis, carcinoma of gall-bladder, liver or pancreas, the cirrheses of Laennec (hobnail) and Hanot (hypertrophic). Cirrhotic livers seem not uncommon to the pathologist though the internist is not given to the diagnosis. Cabot reported 39 per cent of cases found at autopsy as having been diagnosed on the ward in Massachusetts General. Besides these major conditions we must have in mind hepatic enlargement from heart disease, lues, tuberculosis, and blood diseases. Even in the presence of one or more negative blood Wassermanns it is not unknown for a patient to get well following a cholecystotomy where nothing was found provided he had meanwhile been placed on anti-luetic treatment. Acute and chronic pancreatitis, cysts of the pancreas, liver, and omentum, acute yellow atrophy, hemolytic familiar jaundice, Banti's disease merely begin the list of less common possibilities. Purely anatomical abnormalities, while rare, may lead to much confusion—referring to Riedel's lobe, hepatosis, situs transversus, etc.

In the gastrointestinal group we are on the lookout for peptic ulcer, acute, chronic or perforative and carcinoma of stomach, pylorus, duodenum, or hepatic flexure. But pylorospasm, central or reflex in origin, benign growths, diverticulitis of duodenum or colon, colitis, volvulus and ilius, and constriction bands of one sort and another appear in unexpected fashion. The spiro-

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chete furnishes us with case reports on syphilis of the stomach and gastric crises. Tuberculosis here prefers the colon.

In the renal group we meet an entire specialty of medicine. We suspect our patient of calculus, pyelitis, tuberculosis, and hypernephroma on general principals, but think of hypernephrosis, perirenal abscess, renal varices, and other things dependent on our most recent sad experience. We have in mind a woman who had had an appendectomy, then a cholecystotomy, late a cholecystectomy, and still had pain in the right upper quadrant. A mass in the right lower abdomen proved to be a multilocular cyst. Attacks recurred this time with hematuria. Complete study of the kidneys showed only right sided hematuria and diminished function on both sides. Finally in despair—the attacks were requiring morphine to control pain—the right kidney was removed, renal varices found and the patient has been relieved. In this case repeated laparotomy had not helped in the diagnosis, except for the multilocular cyst.

The skeletal group is a minor one, of great interest to the radiographer in his plate interpretation. Pott's disease, cord tumors, and typhoid rib occur from time to time in this region.

The pulmonary group brings to mind pneumonia, lung abscess, pleurisy, acute or chronic, empyema, pneumothorax, hydrothorax, lung and pleural new growths and tuberculosis. This group is the most susceptible of being ruled out by physical examination, but in case indefinite signs are found further investigation is necessary. Thus an apparent hepatic enlargement may mean subdiaphragmatic abscess or a pulmonary consolidation. But an apparently small liver is usually explained by emphysema.

The last or accessory group includes calcified lymph glands which may simulate gall-stones on the x-ray plate, aneurisms as of the aorta, hepatic artery, or coeliac axis, neuroma, herpes zoster, and other disturbances of innervation, as in tabes, lead poisoning and pylorospasm.

Confronted by a patient complaining of a difficulty which involves the area under discussion, having in mind the endless possibilities above sketched, the proper procedure to attain to the solution of the riddle is no mean problem for the physician. All are agreed that the first step and the one most often neglected or slighted is the taking of a proper history. With history taking there is a knack and each follows his own method. (But the family history should, at a minimum, be explored for lues and tuberculosis; occupational pursuits and personal habits noted

with a thought to such things as lead poisoning, hepatic cirrhosis, and exposure to tropical diseases; past infectious diseases listed; and the past performance of each of the bodily systems specifically inquired into as all are concerned in the right upper quadrant.) The present illness from the first admonition of trouble demands our greatest consideration with exactness as to sequence and time elements. The story should be recorded in the patient's own words with as little prompting as possible and in all possible detail. Elaboration can then be carried out as seen fit. The history need not necessarily be long but it must be adequate for on it often depend if not the diagnosis, at least what steps the investigator is to take.

History is followed by a searching physical examination, a urinalysis, and usually by blood count and Wassermann. Summarizing the data thus at hand, either mentally or on paper, one finds oneself possessed of sufficient material to build up a logical and well grounded diagnosis, or merely of sufficient material to direct the further examination. The latter is the common case.

Before the present era of refined diagnostic aids from the laboratory, the clinician attempted to reach his conclusions by matching the symptom complex as above determined against the known complex of each possible disease or trouble. In the case of the right upper quadrant the possibilities are so enormous, the known symptom complexes so often ill-defined and confused, that it is necessary to seek all possible aid in the shape of special examinations. These are often laborious and expensive, constraining the physician to limit himself as much as possible without injuring his diagnosis. So in cases of doubt one investigates the most promising field first, being guided thereto by such symptom complex as he has obtained from the history and general examination.

Cheney, in an article in the American Journal Medical Science, groups his gall-bladder cases by their history into: 1. Those with recurring attacks of biliary colic with good health between. 2. Those with biliary colic plus pronounced gastric symptoms. 3. Those in whom stomach symptoms predominate, colic has disappeared and the gall-bladder symptoms have quieted down to minor importance. 4. Those where there are no symptoms save those produced by the stomach. 5. Those with no symptoms. The first three of these groups would fall therefore into our first anatomical group of liver, gall-ducts and pancreas, but Cheney's fourth group falls into our gastrointestinal group because all the symptoms are of that tract. Or our choice of the anatomical group

for exploration may be directed perhaps to the hepatic group not by the history but because our attention has been held by a physical findings such as jaundice or an enlarged liver.

Consider then the hepatic group. We may supplement our general physical by various roentgenological procedures. First: By direct methods gall-stones have long been shown, at first more or less by accident. George of Boston has now elaborated a technic whereby not only gall-stones but also "pathological gall-bladders" may be shown in a very high percentage of cases. To attain to an iron clad negative diagnosis in this way seems out of the question, but where the method has been faithfully carried out and has shown no pathology it is a very strong point against the probability of its presence. If pathology is shown, well and good.

The method of thus visualizing the pathological gall-bladder is time consuming, requires a careful preparation of the patient and demands the utmost nicety of technic. The resultant shadows are very difficult of interpretation. Yet in competent hands the method is very much worth while.

Secondly, we may determine the upper border of the liver by fluoroscopy except where there is pulmonary or diaphragmatic pathology which blocks out the right dome of the diaphragm. The inferior border of the liver is not so easily defined but shows on all good gall-bladder plates. Recently there has been developed the technic for pneumoperitoneum. Briefly this consists of inflation of the peritoneum through a small trochar such as a spinal puncture needle, using air, oxygen, carbon-dioxide gas, etc.

The gas serves to throw the various abdominal organs into sharp contrast on the fluoroscopic screen and x-ray plate. A technic has been worked out for the various occasions where it is usually employed and though there have been a few fatalities the method is of such great advantage in properly selected case that it will undoubtedly become standardized. By it, kidneys, liver, gall-bladder, spleen and pelvic organs can be outlined and it is of especial value in determining the point of origin of tumors, the presence of adhesions, and the exact location of shadows suspected of being renal calculi. It is not a method to be used as a routine.

Thirdly, many attempts have been made to work out a method to determine, or to get a satisfactory estimation of the liver function, just as the kidney function is estimated. These efforts have proved laborious and unsatisfactory in the extreme. One trouble is that the functions of the

liver are not yet well understood and another that its principal product, the bile, is difficult of collection in its entirety under normal conditions. The search for a satisfactory indicator of liver function is not solved. Because of the number of unknown factors in the equation. Chemistry of the blood has given no particular help. Determinations of the cholesterol in the blood, it was thought, might give a clue. Wilensky, after extensive studies writes that "when a distinction must be made between jaundice due to cirrhosis of the liver and jaundice due to common duct obstruction, the finding of a hypercholesterinemic condition indicates that obstruction is present." This is further qualified by the need to rule out pregnancy, diet rich in lipoids, athero-sclerosis, diabetes and other diseased conditions. The determination has proved of no practical value.

If we include epigastric pain as denoting possible trouble in the right upper quadrant, our attention is very frequently directed first to the gastro-intestinal tract. Here we have several modes of attack. One of the simplest is air inflation of the stomach to determine the outline of the organ and its relation to a possible mass. Next, we have the various test meals, for motility and for determination of the gastric chemistry. The motor meal as a means of detecting delay in gastric emptying, though capable of giving very exact data, has for practical purposes largely given way to the use of the x-ray meal. In determining the gastric chemistry, the method of Rehfuess, i. e., a small tube, the determination of the fasting content, a small carbohydrate meal, and the removal of small portions every fifteen minutes for two hours or until the starch reaction is negative has been recognized as giving the most information. Here again, the interpretation of results is confusing. It was assumed that 50 cc. was the maximum normal gastric fasting content, but such is not always true, some authors wishing to place the limit at 100 cc. The presence or absence of other evidence of retention, such as food residue and lactic acid has been of more help than the mere measuring of the amount. Fresh blood in very small amounts chemically or microscopically is so frequently found that in the absence of other abnormal findings it can be accounted for by the traumatism in passing the tube. Likewise bile is often present where the tube has caused retching. The chemical analysis is exceedingly interesting, the results being capable of charting and classifying.

It is worthy of note that (a) the same person with the same meal under similar conditions but at intervals of a week or more may show very

dissimilar curves, (b) clinical hyperacidity may accompany chemical hypoacidity and normal people often show higher acid values than patients with symptoms of excess acidity. For our purpose, it is enough that we rule out or determine gastric retention as an indication of either a neuropathy, such as pylorospasm, a cancer, an ulcer, adhesions, or an intestinal obstruction; that the chemical tests show no gastric pathology, and that we determine the presence of hyper or hypo or anacidity. To interpret these findings it is then necessary "to consider the patient as a whole," for as stated by Cheney, "hyperacidity is found as frequently with ulcer or chronic appendicitis as with gall-bladder disease, hypoacidity and particularly anacidity is found more often (with gall-bladder disease) than with any other pathology except cancer. Surely there is no hard and fast rule.

By allowing the duodenal or Rehfuß tube to pass through the fasting stomach until the metal tip lies beyond the pylorus and alkaline material is obtained on aspiration, we may obtain specimens from the duodenum for examination. This work has been taken up with enthusiasm by the gastroenterologists who can easily show the presence or absence of the pancreatic enzymes, a point of great import in pancreatic disease. And these enzymes as would be expected, bear no relation to the gastric findings. But the story of the variability and degree of the duodenal alkalinity has not so far furnished us with material of sufficient interest to make the labor worth while. Also, the tube may be used to visualize the entire duodenum under the fluoroscope, in searching for adhesions pancreatic enlargements, etc. To us this seems unnecessary substitute for the barium meal.

Recently (1919) Lyon and others, using the duodenal tube passed in as aseptic manner as possible, with the tip at the papilla of Vater, have instilled magnesium sulphate. Following this with immediate aspiration they obtain from the duodenum a flow of light colored "A" bile which they interpret as coming from the common duct, then a dark bile "B," which they interpret as coming from the gall-bladder, and finally a lighter colored bile "C," which they interpret as coming from the hepatic ducts. Subjecting this material to clinical, chemical, and bacteriological tests various workers have obtained various results. Time and hard work will settle the discussion. In the majority of cases one can get the color changes as described. Our main difficulty has been to get the tube tip to the desired point and to keep it there without working down with the

result that in the middle of the procedure one gets regurgitation of intestinal content, through the tube. It seems hard to place much confidence in a diagnosis of an infection of the gall-passages when that diagnosis is based on the grounds that this or that bacteria was grown even plentifully from a specimen of strongly bile stained duodenal content removed through a tube which has been passed in through the mouth and stomach. But if one finds a "B" bile thick and tarry, full of debris, and perhaps swarming with bacteria one is tempted to risk a diagnosis of gall-bladder infection. We have not yet been able to recognize the epithelial cells described as being typical of the gall-bladder. But we have hopes. Perhaps all cases where no "B" bile is obtained may not mean occlusion of the cystic duct, but providing the test is properly made we find it strongly suggestive and in a case with symptoms of that nature it is good confirmatory evidence at least. When the test goes smoothly to a finish with no evidence of pathology one is tempted to the opinion that the gall-ducts are in good condition. A method which could give us data excluding trouble in the biliary passages would greatly simplify our problem.

The use of the x-ray and the barium meal gives us very valuable information. Carmen reports some 90 per cent correct diagnosis of peptic ulcer but most roentgenographers do not do that well. The opaque meal in relation to gastric pathology is well understood, and in regard to other trouble in the right upper quadrant much so-called indirect evidence is to be obtained, such as abnormalities of motility, pressure defects as of the gall-bladder on the duodenal cap, adhesions as of the pylorus, duodenum or hepatic flexure. And imperfect filling of the hepatic flexure under pressure of an enema suggests ulcer, new growth, etc., but may be merely spasm. Such spasm of the colon or stomach may mean reflex irritation or a neurological condition of the first order. All this is a specialty in itself, becoming more important constantly. It has its strict limitations and a roentgenographer cannot by the use of the opaque meal alone rule out gall-stones or yet gall-bladder pathology.

The examination of the stool is another much neglected clinical procedure. From it we could learn if we would, much of the digestive ability, especially in regard to fats, and we should test for occult blood and intestinal parasites.

Turning now to the renal group, we find ourselves able to prove the presence or absence of pathology with very definite assurance. With careful technic renal stone can be shown radio-

graphically in some 80 to 90 p.c. In case of doubt a shadow can be localized to the kidney by pneumoperitoneum. The same is of use in doubtful tumors of the kidney. Ureteral catheterization for separate specimens, separate functional tests, and for injection of opaque salts into the renal pelvis for pyelography is often justified by the information obtained. Tuberculosis of the kidney can be pretty well excluded by injecting guinea pigs with catheterized ureteral specimens. Of late the renal outline has been shown with great clearness by the production of perirenal emphysema and taking plates. This we venture to be a procedure seldom necessary, but we can study the kidney in form and function more completely than any other abdominal organ.

Study of the skeletal group is largely limited to the x-ray which here comes into its own. We mention a case where upper right abdominal pain and gastric discomfort could be accounted for only by reason of a moderate hypertrophic osteoarthritis of the lower dorsal vertebrae. Erosions of the vertebra may set us on the track of Pott's, malignancy, or aneurism. Such are generally shown or further examination suggested by the ray examination of the gastrointestinal tract.

The x-ray has also thrown much additional light on pulmonary processes and should be used where there is any question. Pleurisy, central pneumonias, abscesses of the lung, and abnormalities of contour, action, or position of the diaphragm are readily revealed.

Our last anatomical group the accessory structures, is explored in a large degree in the course of examining the other groups. But now and again we are aided by Wassermanns of the blood and spinal fluid, by neurological examinations for areas of hyperaesthesia indicative of diaphragmatic pleurisy not revealed by other methods, by examination of the aorta for evidence of atheroma, and of the blood for malaria or cell fragility. (Often one wanders far afield, even into the realm of the psychiatrist.)

Having considered the anatomical possibilities and the pathological possibilities in the right hypochondrium, and having attempted to indicate the available methods for proving their presence, absence, or differentiation, it is obvious that the procedure must vary with each patient. Our guide to the attack must then be the history and the general physical. The pains with which this primary data is obtained and the acumen with which it is used in directing further examination, are the factors which can save our time, spare the patients purse, and in a growing percentage

of cases lead to a correct solution of each individual problem.

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Discussion

Dr. Donald Macrae, Council Bluffs—I wish to compliment the Doctor on his most exhaustive thesis. If his story is true and if you could pull it all off, I think the method would be a good one. But so many of us do not have access to the paraphernalia described by the Doctor that it brings to my mind the necessity of using the various senses the Lord gave us, touch, vision, etc., and in addition our experience and the clinical history. I believe that we do not pay enough attention to these factors. The older I get the more I am satisfied that a thorough bedside examination and painstaking history-taking will come as close to it as we could expect the ordinary doctor to do. And it is surprising how seldom he is off very far. And yet when these cases come to us and we go through these things we sometimes are about as much at sea as is the doctor who occasionally sends them in. Some light breaks through here and there, but I must confess that in spite of the various methods of examination these obscure cases are so numerous that we must make an exploratory incision before we can arrive at an

accurate diagnosis—I think we must all admit that. If all these methods could be carried out as nearly as possible before any such thing takes place, I certainly believe we could get along pretty well with what the Lord gave us and which I am afraid we are not using. I sometimes wonder if examination by means of the x-ray, microscope, and other laboratory methods, is not leading us away from the factor that is the biggest thing of all, and that is the diagnosis which you and I can make. And after all it is the so-called general practitioner who sees the case first, and he does not have all these things to do with. You know what happens to the average patient if you send him to the larger center for various examinations; when he comes back home, as a rule, he has to mortgage his farm. Up to this time no treatment has been instituted, no operation performed, but by the time the man goes through all these various methods of diagnosis he is broke. I am not attempting to criticize the essayist, I do not want to be misconstrued in any way. If we have these means at our disposal we should use them, but from my observations in going along, I do want to emphasize that as we get more of these modern things we think less of what the Lord gave us, which after all is the biggest thing, if we will but utilize it. Recently Dr. Billings of Chicago gave a talk at Omaha, in the course of which he made the statement that 25 per cent of the cases he examined as consultant in his offices in Chicago had been examined by two or more physicians, and the patient confessed that none of these doctors had even laid hands on him or removed his clothing. If that is the case, then we are not giving the patient the thing we should give him, namely: A bedside diagnosis. While I wish to compliment the essayist on his presentation, I think first of all we should consider the bedside diagnosis and use the methods given us by the Almighty in determining the conditions present. Some of my colleagues have experimented with this tube, and it is surprising the number of known normal individuals who show pathology by this test. It seems to me that some of the methods that have been devised will later be discarded. However, they are worthy of consideration by men who are qualified to use them and they may prove to be of help.

Dr. Tom B. Throckmorton, Des Moines—Just one point in regard to the question of chronic appendicitis. Those of you who were present at the banquet last night no doubt recall that the speaker of the evening made frequent reference to the learned professors of Harvard. This morning we have heard references to chronic appendicitis. I want to correlate these statements somewhat by saying that a very learned professor of Harvard told me last summer that there was no such thing as chronic appendicitis; that there were just three kinds of appendices—the acute appendix, the suppurative appendix, and the appendix for revenue only.

Dr. Shellito—I wrote this paper because I have found so often that cases have been sent in and the

radiologist or genitourinary man is asked to make his special examination and arrive at a diagnosis under such circumstances that he has to take the history and make physical examination. I desired to bring out the fact that the history and physical examination are both absolutely necessary, not that in some cases these are the whole thing, but that they aid in determining what special examination should be carried out.

OBSTRUCTION OF THE NASAL PASSAGES WITH SPECIAL REFERENCE TO THE UPPER REGIONS*

HARRY W. IVINS, M.D., Cedar Rapids

More or less recently, there has come to me the feeling that the nasal passages and their diseases have been neglected, when you consider other organs and their diseases, and I have wished to discuss here with you from a purely practical standpoint, a subject that I believe is of vital importance to the head specialty men. (I offer this statement because just shortly before I wrote this paper, I met a doctor and in conversation with him, I suggested I must get busy on my paper and he made this remark which you have all heard in time gone by, "Well Doctor, go up and pull down a few books and you have a good paper in half an hour." Now of course, we know the doctor was joking, but sometimes I believe our papers are rather the compilation of other's findings and statistics than our own actual findings. So I have chosen a subject that appeals to me because of what seems to me to be a crying need.)

I am designating my subject, not as you see it on the program, but as "The Prevention of Serious Head Diseases Caused by Nasal Obstruction." Disease of the ears, sinuses and eyes are due in a large percentage of cases to nasal obstruction, and I believe more effort should be directed to the prevention and then there will be less of these conditions, fewer fatalities and perhaps greatest of all, fewer cases of deafness both in the aged and the young. We should be grateful and profit by the lead that Dr. Dean at the head of the U. M. S. has given us in his paranasal sinus studies. We should go on farther and develop every angle of the nasal question by trying to prevent these para-nasal sinus diseases of children.

Teeth, tonsils and adenoids have been the subject of much study during the last few years, and

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as a result, no one really knows as yet the length and breadth of value of these studies to mankind. The future may some day record in understandable terms its real meaning in relieving suffering and the building of a stronger race. This work has no doubt had its effect in forcing men into a better understanding of the havoc caused in the nose by stopping the drainage from the sinuses and interference with the ventilation and drainage of the ears. .

Dr. Dean has given us very definite data on the age at which sinuses are formed and may be opened, so we must know that in very young children the anatomical condition is present and inviting trouble, all we need is a bad cold in the baby's head. Who ever saw a baby that sooner or later did not have a bad cold in the head? To me, the important thing is to prevent that child's ears and sinuses being infected. Now in a small child—a baby—how many doctors do anything for the drainage of the baby's nose? Isn't it a truth that often the patient is advised that it's only a cold and will be all right in a few days? Isn't it a truth that in scarlet fever and measles nothing whatever is done by the attending physician towards the treatment of the nose and throat? I will offer a little later the treatment I have been using.

Every specialist has his quota of the hard of hearing cases, a great many of which are catarrhal, at least influenced by catarrhal conditions of the nose and throat. These conditions must be treated and under treatment many of them get a very satisfactory relief, practically all are improved. This however, is the condition for the present. In the future we must make a greater effort to prevent, and in preventing inflammatory conditions in Eustachian tube and middle ear, we must better our means of preventing nasal obstructions to drainage first and ventilation second. When we do this, we will cut down the tendencies to infection of Eustachian tubes and sinuses and aid in preventing mastoiditis and dry catarrh. Dry catarrh of the middle ear, I believe begins earlier in childhood than we know, and the earlier we begin to care for the nasal sinuses and the longer we keep acute infection out of the mucous linings of the nose and throat, the less trouble we will have in later years.

It has been my pleasure the last two or three years to examine certain school children and in this work we see children from the kindergarten up to high school, and I was much surprised and interested in observing the development of the nasal passages. It is my observation that nasal spurs, deflected and bulbous septums are notably

in formation as early as four or five years, and gradually become more marked as the child grows older. I do not know at this time just what percentage of these children showed septal abnormalities, but a greater number than I had thought for. Deformities in five-year-olds generally appear very small, in the next grade more marked, and so on up, until in the high school they are fully developed.

So far as surgery of the nose in children is concerned, the best of judgment is none too good. However, there are times when it is necessary, and then I think it should not be delayed, especially in para-nasal sinus infections. In a rather limited survey, it would seem that the nasal septum is quite fully formed at the age of sixteen years, and it is doubtful whether septums should be operated on before that.

The most common forms of obstruction as I find them are; first, septal deflections, anterior or posterior or both; second, large bulbous condition of the cartilage on its superior border, which may be just thickened cartilage or it may be double walled; and third, by enlarged middle turbinates. These conditions I believe should be removed in every instance as early as possible. It is more important—if that be possible—than the removal of diseased tonsils.

A bulbous septum may completely fill the upper passage, stopping ventilation and drainage and eventually involving the middle turbinate, the ethmoid and frontal sinuses. These bulbous portions must be completely removed or the results may not be so good. I have never experienced any trouble with the bridge of the nose. If following this in a few months the nasal passage is not clear, the middle turbinates may be operated.

Now just a word about the preventive treatment in children. It has been my practice to use a 5 to 10 per cent solution of silvol in both sides of the nose, as indicated by the condition in all children. Trying to use only as much as is necessary to get into all the angles of the nasal passages and Eustachian orifices. We put the child on its back and using a medicine dropper shoot five or ten drops into each side of the nose. This we believe to be simple but of inestimable value.

I hope there will be a discussion at least of this part of my paper, as I am anxious to learn more of the methods used by the doctors in treatment of children.

Discussion

Dr. W. H. Johnston, Muscatine, (Opening)—I have enjoyed Dr. Ivin's paper on this, a most important problem. To prevent sinus disease is certainly better than to have it develop, require treatment, and

lead, perhaps to complications in the ears and eyes in later life. The unfortunate part is that it is quite difficult to get in touch with these patients until the para nasal sinus disease has developed. Even then, unless some complication arises, we seldom see them. This is due mostly to the way people are educated, the doctor tells the parents that it is only a cold and will require no treatment, and usually they get no treatment unless some ear complication arises. Is it not true that adenoids and diseased tonsils are the most potent factors in the etiology of para nasal sinus disease? The studies carried on at the University of Iowa have established this fact. Still it is quite difficult at times to convince parents that surgical treatment of this kind is necessary. The hygienic surroundings and the general condition of these children should not be overlooked, fresh air, diet, exercise, etc., all may contribute by lowering the patient's resistance. As to the treatment, the douching or irrigation seems to give the best results in my hands, also the suction and vacuum. In small children they may be placed face down and the head low over the end of a table, the can containing the solution to be placed not more than a foot higher than the head, the fluid being allowed to flow into one nostril and out of the other. The danger of douching comes in causing any marked increase in the pressure on the nasal cavities, forcing pus into the ears or into an un-infected sinus. Never should the tonsil be plugged with the nozzle of the irrigating apparatus, there should always be a free exit for the fluid. The nasal syphon seems to be a very satisfactory apparatus for use with older children and the Haskin method or the Coffin apparatus is satisfactory for use with any age patients. A mild alkaline solution, warm, containing a half teaspoonful of salt and a like amount of bicarbonate of soda to a pint of water, makes a very satisfactory non-irritating preparation. This douching may be followed by dropping argyrol into the nose as suggested by Dr. Ivins. Many ear complications could be prevented if these children were taught how to blow the nose correctly. It is doubtful if surgical treatment should be advised for either the treatment or prevention of sinus disease in children under sixteen years of age, unless some serious complication exists. Dr. Dean has opened the maxillary sinus as early as the eighteenth month and says that the teeth are not injured. He is always guided by an x-ray picture. Injury to a tooth rudiment would result in the eruption of a malformed tooth eventually. Great care should be exercised in the surgical treatment of the maxillary sinus in infants. Most of the anatomical conditions mentioned by Dr. Ivins as being the cause of para nasal sinus disease are themselves very often caused by post-nasal obstruction and it is an interference with the normal development. At birth the nasal fossæ are as wide as they are long. The bony posterior nares are very small 5-7 mm. x 7-10 mm. in height and transverse dimensions respectively. By the sixth month these diameters have doubled and the opening remain oval in shape. At puberty the

vertical diameter is always greater than the transverse and the openings are oblong. If free nasal breathing does not exist, there very often develops the high palate arch and results in a decrease in the vertical diameter of the nasal fossæ. There is a consequent bending of the septum and the formation of spurs, then the compensatory enlargement of the middle turbinate and an obstruction of the para nasal sinuses. Septal deflection is not due in every case to this cause, no hypotheses yet formulated adequately explains the formation of the non-traumatic deflected septum. Zuckerkandahl's studies confirm the statement that it is a product of ultra civilization and is unknown among the savages and semi-civilized races. They do not tell us, however, whether or not these savages suffered from para nasal sinus disease and its complications.

Dr. Lee Wallace Dean, Iowa City—Dr. Ivins, in his paper, mentions so many important things that it is rather difficult to select any one to discuss. He certainly said things which give foundation for thought for all of us. He called our attention to the fact that in cases of hyperplastic otitis media the trouble probably dated back to childhood. It is interesting, as shown by Wittmaack, that if we x-ray the mastoids of these patients with hyperplastic otitis media we will find most of them to be of the infantile type. I suspect that all cases of hyperplastic otitis media date back to the troubles early in childhood or infancy. I am interested in the treatment of obstructive lesions in the upper part of the nasal passages. I would like Dr. Ivins to discuss this in closing. When you have a lesion in the frontal sinus or the anterior ethmoidal cells which is not distinctly suppurative, and you have either a high deflection of the septum or a thickened septum, should we remove the middle turbinate and enlarge the nasal frontal duct or first operate the septum? My conclusion is that the anomaly of the septum should be first corrected. I have reviewed my cases and find that 90 per cent are completely relieved by work done on the septum without the turbinate being touched. Those cases that have not been relieved by work done on the septum have had the middle turbinate removed afterwards and the nasal frontal duct enlarged, and in no case have I noted crust formation. In answer to Dr. Pearson's most difficult question I would say that we can correct a full deflection of the septum in a child of fair development of thirteen years of age or over, providing we do not remove more of the septum than we should in an adult. In a child from five years of age to thirteen years of age I would not correct anything except a low deflection of the septum and I would only correct that when there was some imperative reason for its correction. I would not operate a high deflection of the septum in a child under thirteen years of age though have never seen a bad result from such an operation on a child of this age.

Dr. C. P. Cook, Des Moines—I would just like to ask Dr. Ivins a question. I understood he said he would trim the turbinates in children. Now I may

have misunderstood him. I feel that it is very seldom necessary in a child to trim the turbinate. Usually if the arch is taken care of and the naso-pharynx put in a good condition, in my opinion, it is seldom necessary to trim the turbinate in a child five or ten years of age.

Dr. Gordon F. Harkness, Davenport—I just wonder how many men are making general use of the nasal syphon in which a child is held high and flat, or an adult in a standing position. We have found that in routine work this tube going from the nose to the floor gives an irrigation by a pulling or suction without pressure from without and has been very satisfactory in our practice. We have adopted it rather routinely and not only in the acute infections but in a post-operative way in our nasal cases and think we could not get along without it, the essential feature being the long tube from the nose to the floor.

Dr. F. F. Agnew, Independence—In regard to the Nichols Nasal Syphon apparatus which Dr. Harkness mentions, I have never used it with children but I have used it in quite a number of cases of adults and I find it a very satisfactory way of cleansing the nose, and especially the sinuses, providing, after its use, some emollient is used on the membranes, which I think is a very necessary adjunct to that treatment.

Dr. H. M. Ivins, (closing): I am rather sorry that more of you have not taken up the treatment. I was rather in hopes that there would be a little more said on the subject of treatment for the simple reason that I would like to know what other men are doing. That is the point, I would like to know what other men are doing in the treatment of children. I have found it rather hard to treat children, especially babies, because of the fact that they struggle and I have found that the use of silvol, which I have suggested, is the most convenient and it gets into every angle of the nasal passages and seems to me that it does do a great deal of good.

As to what Dr. Harkness said, I was glad to hear that because I have seen the apparatus which he speaks of quite recently and have wondered as to its value and what it was worth. I am going to say this: That I feel decidedly grateful to Dr. Dean for what he has said because when any young man, I say young man because I have not been at it very long, gets up and talks on a paper, he certainly feels encouraged, or he certainly feels kindly at least if a man who has done the work and been over the field will discuss the matter and perhaps may take up some of the finer points. In my paper I said—I made reference at least, to the fact that I believe that most of the para-nasal sinus diseases were perhaps caused more by our deflected septums than anything else and I believe, or I suggested this: That an operation upon the septum, which was really the abnormal organ, was the proper thing first, and secondly, if there was not relief, then it might be advisable to do further operation on, for instance, the turbinates. At

least we must have drainage and ventilation, but I did believe that it was decidedly foolish to operate upon any structures which are normal. I think when you operate on the abnormal and wait—I wait three to six months before I think of doing anything more—that it would be giving the septum a chance to completely heal, and there would be some return to the normal in the nose. I made the statement of sixteen years old for children because of the fact that I took this matter up with Dr. Prentiss and likewise took it up with a very good man in Chicago. I think the Chicago doctor's suggestion of sixteen years was rather to keep me from operating too young. I think probably he thought it was safer, and yet that may be definitely his idea of the thing, but that was the reason why I suggested the age of sixteen. I have not in any of my work, at least, nor have I seen with anybody else's work, any broken down septum or nose bridge from a septum operation and I believe if septum operations are properly done, there isn't much danger. Now the gentleman here asked me about the trimming of turbinates. There was no suggestion of trimming the turbinates in children, whatever I may have said that led him to believe that; that was not my intention and was not in my paper. I did not say that. I am not in favor of it. I would not even say eight or ten years for children. There would have to be some decided reason before I would do operating on children's turbinates.

ANOMALIES OF THE ESOPHAGUS*

With Report of a Case

T. D. KAS, M.D., Sutherland, and H. L. AVERY,
M. D., Pringhar

The Case—A male child, white; weight six pounds, four ounces; normal from all external appearance; the first born to the mother, aged twenty years, of normal build and good health. The period of gestation was normal. Delivery was at term, and while somewhat prolonged, was normal, except that instrumental assistance was rendered late in the second stage under chloroform anesthesia. Presentation was L. O. A. Father, age thirty, is tall, muscular, and in good health.

Following delivery, it was noted that the child had large quantities of mucus, in the mouth and throat. This was removed by swabbing, first with the finger, then with small pieces of gauze. The ear placed to the chest revealed numerous rales, or rather a rattle throughout the chest, a condition not uncommon in the new-born. The child voided a large amount of urine, and expelled a copious quantity of meconium following birth. The cord was clamped and cut, and later tied and dressed in

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the usual manner. The body was oiled, the eyes treated, more mucus removed from mouth and throat. The child was dressed and placed on the right side in an inclined position with the head down, and external heat applied to the feet. Later, more tenacious mucus was removed from the mouth. The cry lacked the usual volume and clearness of the normal child, and seemed more like the feeble effort of a premature baby. The nurse in attendance gave water with a medicine dropper, and noticed what she considered a difficulty in swallowing, followed by a considerable discharge of watery mucus through the nose and mouth. Subsequent administrations of fluid were repetitions of the above, with the addition of cyanosis. At times cyanosis became so marked that the child was suspended by the feet and artificial respiration resorted to. When put to breast, the effort was rather labored, and was followed by the same results as after taking water.

Obstruction was apparent. Therefore a No. 18 soft rubber catheter was passed, and the trouble located $3\frac{1}{4}$ inches from the outer margin of the upper jaw.

Proctoclysis was now resorted to in order to replace the loss of fluid and consequent loss of weight. But the fluid was not retained.

The temperature ran an irregular course. On the morning of the third day it reached 100° F.; on the evening of the fourth day 100.6° F., and gradually dropped to subnormal on the fifth day.

In an effort to avoid starvation, the parents finally consented to the removal of the child to a hospital, where a gastrostomy was done on the forenoon of the eighth day under ethyl chloride supplemented by ether. The Senn operation as described by Warbasse was the operation of choice.

One hour after the operation normal saline to which a few drops of brandy had been added, was instilled through a No. 10 catheter anchored in the operative site. This was repeated in two hours, and thereafter at hourly intervals. The pulse, which had heretofore kept in proportion to the temperature, now improved in quality. The general picture was one of improvement; so much that we were induced to use a mixture of modified cow's milk in the same quantity of feeding after twenty-four hours in the normal saline. The child's condition was encouraging until late on the ninth day, when he suddenly appeared to be choking, and attempted to vomit. Milk curds and mucus were expelled from the mouth and nose. Cyanosis appeared. The pulse became

rapid, and remained so until the child died ten hours later.

Post-mortem findings were briefly as follows: The upper end of the esophagus, about one inch long, and in a normal position, terminated in a blind pouch resembling a test-tube. The lower end inclined forward, and formed a perfect anastomosis at the bifurcation of the trachea, the lower margin of the anastomosis being on a level with the apex of the bifurcation triangle. The lumen of both segments of the esophagus was of equal size. The lungs showed the conditions found in early hypostatic pneumonia. All other findings were negative.

A review of the embryology will best account for these anomalies. Gray says regarding the development of the alimentary canal:

"The development of the intestinal cavity is one of the earliest phenomena of embryonic life. The original intestine consists of an inflection of the hypoblast extending from one end of the embryo to the other, and is situated just below the primitive vertebral column. At either extremity it forms a closed tube in consequence of the cephalic and caudal flexures, and this manifestly divides it into three parts: a front part, enclosed in the cephalic fold, called the foregut; a posterior part, enclosed in the caudal fold, the hind-gut, and a central, or mid-gut, which at this time freely communicates with the umbilical vesicle. The ends of the fore and hind gut do not communicate with the surface of the body, the buccal and anal orifices being subsequently formed by involutions of the epiblast, which later on forms communication with the gut. From the foregut are formed the pharynx, esophagus, stomach, and duodenum, from the hind-gut, a part of the rectum, and from the middle division, the rest of the intestinal tube. The changes which take place in the foregut are as follows: the middle portion becomes dilated to form the stomach, and undergoes a vertical rotation to the right, so that the posterior border, by which it is attached to the vertebral column by the mesentery, is now directed to the left, and the anterior border to the right. At this time it is straight, but it soon undergoes a lateral curve or bend to the right at its upper end. It thus assumes an oblique direction, and the left border (originally the posterior or attached border) becomes inferior, and forms the great curvature. The mesentery by which it was attached becomes the great omentum. The portion of the foregut above this dilatation remains straight, forming the pharynx and esophagus; while the part below the dilated stomach forms the duodenum, and in

connection with this the liver and pancreas are developed.

The buccal cavity is formed by the involution of the external layers of the blastodermic membrane, which passes inward and meets the pharynx, or upper part of the foregut. The two cavities are, however, at first completely separated from each other by all the layers of the blastoderm; but at an early period of development a vertical slit appears between them. This gradually widens and becomes the opening by which the common cavity of the nose and mouth communicate with the pharynx."

Bryant and Buck in *American Practice of Surgery* say regarding anomalies of the esophagus: "The congenital deformities of the esophagus possess very little practical significance. In the majority of these cases the patients have other deformities at the same time, as a result of which they are either born dead or die a few days after birth. Such children have so little vitality that only in rare cases would they be able to stand the necessary surgical measures. The most common deformity is division of the esophagus into two portions, usually two blind pouches, which may or may not communicate with the trachea. The origin of this deformity is explained by the development of the esophagus and trachea. The trachea and lungs are developed from the ventral portion of the foregut. For some time there is a cleft between the trachea and esophagus before separation becomes complete. Disturbances of development during this period may produce the various kinds of deformity. In such cases the children are unable to swallow at all, or else the food comes back through the nose. They can live only a short time (thirteen days being the longest period, according to Von Hacker). They die of inanition or from pneumonia caused by the entrance of food from the upper portion, or by the escape of mucus from the lower portion, into the lungs. Gastrostomy has been suggested for the relief of the condition."

Osler mentions the following: "Malformations of the gullet are not common. They consist, for the most part, of a series of variations dependent on the fact that embryologically the esophagus and pharynx have a common origin, and that the continuity of the esophagus may be interrupted by a stenosis or obliteration. Thus the tube may be open above and below, and its central part may be represented by a mere cord. Either the upper or the lower segment may open into the air passages. It sometimes happens that the esophagus, though patent, opens into the trachea, and aspiration pneumonia is thus produced before any sus-

picion may arise of abnormality. Two gullets have been known to exist side by side."

A recent review of the literature on this subject gave a total of fourteen cases of congenital anomalies of the esophagus, the majority being of the type above described.

Summing up, we find:

1. While these cases are rare, still they are to be met with and dealt with.
2. A diagnosis cannot be made until the inability to swallow is noticed and a sound passed.
3. The deformity is due to an arrest of development.
4. The cases are invariably fatal.

THE SURGICAL RECONSTRUCTION OF THE PARALYTIC UPPER EXTREMITY*

ARTHUR STEINDLER, M.D., F.A.C.S., Iowa City

The special problem selected for demonstration is that of restoring function of the paralytic upper extremity by means of surgical procedures.

From a practical viewpoint, the functional value of upper extremity depends largely upon the execution of a certain number of cardinal movements and a series of movements of secondary order. The restoration of the cardinal movements stands naturally in the foreground of interest.

The most important movements of the extremity are:

1. The power of abducting the arm; this gives the total extremity the proper sweep and reach from the shoulder joint.
2. The flexion of the elbow; this controls the motion of the forearm in placing it at different levels suitable for the action of the hand.
3. The hyperextension of the wrist; this is the proper position to display strength and endurance for the fingers as well as for the thumb.
4. The closing and opening of the fingers together with the ab- and adduction of the thumb; this imparts to the hand as the working organ of the extremity the power of gripping and handling objects.

In comparison with these, the other motions of the shoulder, elbow, forearm, such as adduction, rotation, extension, and flexion in the shoulder, pro- and supination of the forearm, while of considerable importance by themselves, are comparatively of lesser import and must therefore take second rank in surgical considerations. In the

*Presented before the Tri-State Medical Association, Iowa, Illinois and Wisconsin, Peoria.

end, all types of movement are subservient to the work displayed by the hand and fingers, and one must therefore judge the possibilities of rehabilitating the disabled member from the degree of function, attained or attainable, for hand and fingers. In the case of the paralytic upper extremity, the greatest single factor leading to this disability is anterior poliomyelitis. Ninety per cent of our cases of upper extremity paralysis were due to this cause. Next to it, traumatic paralysis such as injuries to the plexus or peripheral nerves, came into consideration.

As to anterior poliomyelitis, we have found among our material of 1100 cases, approximately 100 or 9 per cent in which the upper extremity was permanently involved.

Not less than 80 per cent of these cases show paralysis of the deltoid muscle. The permanent paralysis of this muscle causes definite disability of abducting the arm. No adequate substitution of this movement by other auxiliary muscles is possible.

The flexion power of the elbow due to paralysis of the biceps, brachialis anticus, and supinator longus, is lost in 50 per cent of the cases in which deltoid paralysis is present. The disability of the arm now becomes greatly increased. The member, incapable of being abducted from the body, is also without control of the different working levels for the hand. It is hanging helpless at the side of the body and depends upon the other extremity to lead hand and fingers to the proper place where they may display action.

The extension power of the wrist is lost in approximately 25 per cent of the cases of paralytic upper extremity. Inability to extend the wrist means the loss of tension for the flexors of the fingers and the thumb, even though the muscles of the fingers be not paralyzed themselves, and this again induces a degree of weakness of the hand which greatly interferes with their functional value. The loss of the opposition of the thumb due to thenar palsy is encountered in approximately 10 per cent of the cases of upper extremity. The hand appears flat and the gripping power is greatly impeded by inability to oppose the thumb.

We have then, shortly, the following single problems to deal with: The flail shoulder; the flail elbow; the drop wrist.

Flat Hand—I repeat that the discussion of these conditions is explicitly limited to such cases in which the disability remains permanent, that is, in which conservative treatment even properly and timely applied and extended for a suitable period does not call the lost action of the muscles.

For the past five years, we have given extensive study to the problem of dealing with the disability in a definite surgical way. Various surgical procedures have been carefully investigated, experimentally and clinically, until a definite policy has been developed.

We find that the permanently flail shoulder is best dealt with by arthrodesis. The arthrodesis is applicable in patients from ten years up. The position of the arthrodesed joint is slight forward flexion and 90 degrees abduction in children; slight forward flexion and 70 degrees abduction in adults. The time of fixation following operation is six months, of which three are spent in a plaster of Paris cast and three more in abduction splints, with the addition of muscle training and massage in the latter period. The operation itself is based upon the proposition that all necessary motions of the arm may be controlled by musculature of the shoulder blade which usually escapes paralysis. The musculature of the shoulder blade is so arranged that in moving the scapula, all positions into which the arm itself can be moved, can be assumed. The scapula aligns itself with the humerus in all directions.

The pre-supposition of a good operative result is fusion of the shoulder joint, bony fusion being much more preferable although fibrous fusion does not by any means preclude good functional end result.

Inability of flexion in the elbow may be treated surgically by a transposition of the flexors of the wrist from their point of attachment at the internal condyle of the humerus to a point two inches higher up in the intermuscular septum. The physiological foundation of this method lies in the fact that these muscles normally exert a very slight flexion action of the elbow. It is normally very insignificant, owing to the short leverage represented by the insertion of these muscles close to the axis of the joint. On the other hand, transposition of the origin of these muscles to a higher point upon the humerus materially increases the flexion power of this muscle group. The operation is followed by immobilization in a flexion splint, to which massage and muscle training is added in the course of a few weeks.

For the drop wrist deformity, the method of arthrodesis of the wrist-joint has been given the preference. Tendon transplantation is by no means excluded, but reserved only to those cases in which enough muscle power is left to serve the extension of the wrist as well as that of the fingers. To this group belong some of the traumatic cases. In most of the poliomyelitic cases,

however, the extensor paralysis is so extensive that muscle material available for transplantation becomes lacking. The arthrodesis of the wrist in the suitable position of slight hyperextension furnishes then the proper physiological position in which the fingers display action to the best advantage.

The problem of the so-called flat hand or the hand in which opposition of the thumb cannot be carried out can be solved by a simple muscle plasty. It consists in the use of one-half of the preserved long flexor of the thumb made to serve as opponens of the thumb by swinging it around the metacarpal, and fastening it dorsally to the base of the basal phalanx of the thumb. This is the operation employed with preference in cases of thenar palsy.

Other operations have been carried out for the relief of different phases of the disability, as the case would require, but time does not permit me to go beyond the description of these four most frequently employed procedures, each of which serves for the restoration of a distinct detail in the paralysis of the extremity. All operative procedure should be regarded as the introduction of the treatment. The after treatment is, to be regarded of paramount importance in the conduct of these cases. Fusions of joints such as are involved in the operation on shoulder and wrist require time and rest. This is done by careful immobilization. When new muscles are called upon to take over the function of paralyzed ones, careful muscle education by means of massage, muscle drill exercises are indispensable. This may be illustrated in the case of arthrodesis of the shoulder, when the active abduction of the arm is taken over by the trapezius and serratus magnus muscles. Also, in the muscle transposition of the elbow, when the forearm flexors, now flexors of the elbow, must be educated carefully for a new task. The same is true of the function of the flexor of the thumb as opponens pollicis and of other operative procedures.

About forty cases of arthrodesis of the shoulder have been carried out in the last few years, and of those over twelve years of age, the great majority showed complete bony fusion, attended by good functional results. In a few of the younger patients, the results were poor because of incomplete fusion mainly due to the difficulty of obtaining fusion before the age of ten.

About thirty operations of flexor plasties of the elbow were performed with about 70 per cent good results. The failures were due largely to weakness of the flexors of the wrist and fingers which were used as transposition material. It is

very necessary that one should satisfy oneself that the action of the flexor muscles is good; with the flexors of the hand also paralyzed, the operation to be performed would be not that of muscle transposition but rather arthrodesis of the elbow joint also.

Of forty cases of arthrodesis of the wrist, about 70 per cent showed good functional result and stable wrist. Those which did not show a stable wrist were either younger children in which the arthrodesis is difficult to perform or spastic cases in which immobilization is most difficult. We now do not perform it under the age of ten. The arthrodesis of the wrist is also difficult in some cases of spastic paralysis because of the impossibility of securing complete fixation for the arm even in plaster of Paris.

Of fifteen cases of flexor plasty of the thumb, good results were obtained in about 80 per cent. The failures were due partly to faulty technique and partly to mistakes in the after-treatment, especially the proper splinting and bandaging following operating. In the accompanying moving picture films, I shall have the pleasure of explaining to you the details of the operation and of showing you some of the operative results.

PHYSICIANS WHO LOCATED IN IOWA IN THE PERIOD BETWEEN 1860 AND 1870

D. S. FAIRCHILD, M.D., F.A.C.S., Clinton

WILLIAM F. PECK, M.D.

AND

W. D. MIDDLETON, M.D.*

One of the most interesting characters in the medical history of Iowa was Dr. W. F. Peck of Davenport who for many years was a dominating figure in the medical profession of this state.

Dr. Peck was born in Galen, Wayne county, New York, January 22, 1841. Received a common school education, and with this slender preparation for a distinguished medical career, entered Bellevue Hospital Medical College and graduated in 1863 with high honors.

Dr. Peck was distinguished in early life for his energy, indomitable courage, self-reliance and persistent determination to accomplish his purpose of rising to a high place in his profession.

After supplementing his medical college course with a year of hospital service in New York City,

*We are indebted to Mrs. S. C. Plummer for much of the data concerning Dr. Middleton.

he opened an office in Davenport. It was not long that Dr. Peck had to wait for a living practice; his personal advantages, his energy, practical ability and self-reliance attracted the attention of the foremost citizens of Davenport and brought a wide circle of admirers. Dr. Peck was not long satisfied being only a practicing physician and surgeon. There were public professional duties to be performed. From being secretary of the Scott County Medical Society in 1866 he developed the thought of a medical department of the State University. The medical school at Keokuk had for many years claimed a loose affiliation with the State University as its medical department but Dr. Peck believed there should be a real medical department at Iowa City.

In 1868 Dr. Peck submitted some definite plans he had formed in relation to a medical school to Judge John F. Dillon who approved them and lent his cooperation. It was fortunate at this time to have the support of Judge Dillon whose name carried great weight, who was himself a graduate in medicine and at one time was a practitioner of medicine. The same year the medical department proposition was submitted to the regents and was approved. Through the influence of John P. Irish an appropriation of \$50,000 was granted and in 1870 \$54,000 was added.

After many discouragements the medical department of Iowa University was founded with Dr. Peck as dean and professor of surgery, a position he held until he retired in 1891; his death followed the same year.

During the twenty-one years of his connection with the medical school he ruled its destinies with a firm hand. Dr. Peck was much respected by the faculty, the older graduates remembering him with affection and pride as the leading spirit in the medical profession of Iowa of his generation.

Dr. Peck's activities in a public way were not confined to the University Medical School but were extended to the development of a Sisters Hospital at Davenport and at Iowa City. In 1869 Mercy Hospital was organized at Davenport and a little later at Iowa City. At both of these hospitals he was the leading influence until his death, in 1891.

At the end of Dr. Peck's first year of practice he returned to his native state and was united in marriage to Miss Maria Purdy of Butler, Wayne County, New York, a most admirable lady and generous helpmate.

Dr. Peck was a courageous and resourceful surgeon and was for many years recognized as the leading operator of his state. A curious and

interesting fact may be mentioned in this connection. To the last days of his life he refused to accept antiseptic and aseptic surgery and opposed the germ theory of infection. He was an avowed adherent of the teachings of Lawson Tait that cleanliness and rapidity of work were essential but not antiseptics or sterilization.

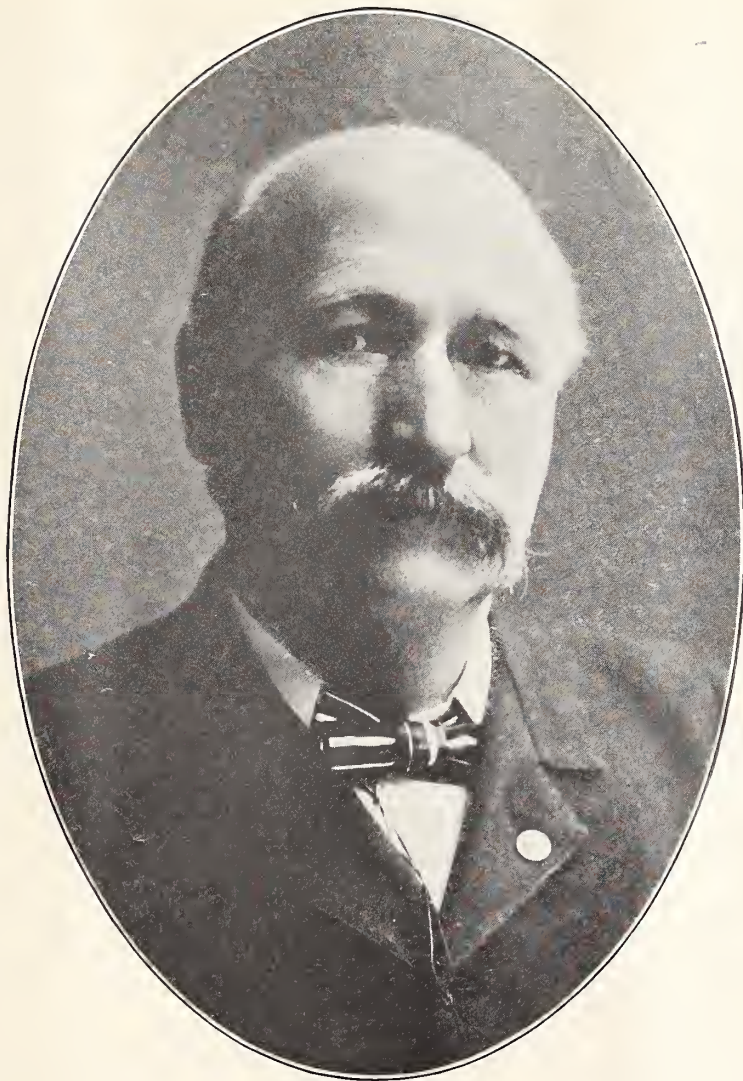
Dr. Peck was president of the Iowa State Medical in 1876; was a vice-president of the American Medical Association and at one time chairman of the Section on Surgery of the American Medical Association; and for many years chief surgeon of the C. R. I. & St. P. Ry. Co. and of the Soldiers' Orphans' Asylum at Davenport. His influence in the latter institution was of importance in establishing sanitary relations and helpful treatment to a class of unfortunates supposed to need sympathetic and sentimental considerations more than anything else of Davenport.

Dr. W. F. Peck and Dr. J. C. Hughes were charter members of the American Surgical Association.

Closely associated with Dr. Peck was Dr. W. D. Middleton of Davenport, one of the most delightful physicians the state of Iowa has produced. It was the good fortune of the writer to first know Dr. Middleton at the meeting of the Iowa State Medical Society held in Marshalltown in May, 1873. Dr. Middleton was at that time professor of physiology in the but recently organized medical school of the State University. It was under the auspices of Dr. E. F. Clapp, then professor of anatomy in the University. Dr. Clapp and the writer were students in the University of Michigan in 1867-68, and as all students listened to all the lectures, a close friendship sprang up between us, as we occupied adjoining seats, and on the pledge of Dr. Clapp we were admitted to goodfellowship which continued until Dr. Middleton died, April 5, 1902.

Professor C. E. Bessey, professor of botany, Iowa State College at Ames, conceived the idea of organizing an Iowa Academy of Science, and requested the writer to correspond with a small group of medical men in Iowa, interested in scientific matters, to meet at Iowa City for the purpose of forming the Iowa Academy. The charter members, representing the medical profession, were Dr. W. D. Middleton, Davenport; Dr. P. J. Farnsworth, Clinton; Dr. Elmer F. Clapp, Iowa City; Dr. A. G. Field, Des Moines, and Dr. D. S. Fairchild, Ames. The representatives of the University faculty were professors Heinrich, Calvin, McBride and Nutter.

At the death of Dr. W. F. Peck, Dr. Middleton succeeded him as chief surgeon C. R. I. & P. Ry.



W. D. MIDDLETON

Co., which position he held to the time of his death in 1902, to be succeeded in turn by Dr. S. C. Plummer, whose father was a distinguished physician in Rock Island.

Dr. Peck was the first chief surgeon appointed in 1875, followed by Dr. Middleton 1891 or 1902. These three chief surgeons have placed the surgical service of the Rock Island road in the front ranks of efficiency.

Dr. Middleton became a member of the Iowa State Medical Society in 1870 and was elected president in 1890.

Dr. W. F. Peck and Dr. W. D. Middleton will always be associated as members of the same medical family, not only in relation to the Rock Island railway and the State University, but also as leading factors in the professional life of Davenport and the State of Iowa. Differing in many respects, they supplemented each other in relation to medical affairs.

Dr. William Drummond Middleton was born

April 26, 1844 and died April 5, 1902.

William, son of John and Mary Gilchrist Middleton was born near Aberdeen, Scotland. He inherited from his Scotch ancestry a stalworth and persevering disposition, and a fearless independence characteristic of his race. He had a keen sense of humor and his ready wit and joyous ways gave increasing pleasure and inspiration to those about him.

He loved nature and from the highlands and lowlands of Scotland to the forests and plains of the Western world, every tree, shrub and flower was dear to him. He knew them all by name and when much fatigued, to lie under the trees and look up, was a favorite occupation.

He loved animals, from his favorite horses to his dogs and cats.

He enjoyed fishing and sports.

His home stands a monument to his memory, not gained by investment, but by patient hard work. He said "It is a beautiful home and one

would think you had been in it always, but I cannot feel entirely at home until the children have left their marks on the woodwork and furnishings."

Dr. Middleton came to America at the age of twelve, the proud possessor of the parochial school medal for excellence in scholarship. He was well versed in Latin and could quote Homer by the page. He graduated from the Davenport High School and taught in the county schools, doing all he could in his spare time to prepare himself for the future. At the age of twenty, he enlisted as a volunteer for the Civil War, Company I, Forty-fourth Regiment Iowa Volunteers, receiving at the close of the war, his certificate of thanks for honorable service, bearing the signature of Lincoln and Stanton. Deciding to study medicine, he entered Bellevue Hospital Medical College in New York City. By working hard in vacation and by close economy and sacrifice during the school year, he completed the course, graduating in 1868, beginning practice in his home city, April 6, 1868, ending April 5, 1902, thirty-four years minus one day.

Dr. Middleton identified himself with an organization of young men called the "Associated Congress." It met in the library building. They had papers, discussions and debates. He was active and faithful member and his young friends watched with interest as he forged his way, admiring his energy and ability.

In 1869 the medical department of the State University was organized and he was elected to the chair of physiology and microscopic anatomy, which he filled until 1886, when elected to the chair of theory and practice of medicine. In 1891 he took the chair of surgery. In 1891 he became dean of the college of medicine, a position he occupied the remainder of his life. The thirtieth anniversary of his connection with the college was celebrated by a banquet and the presentation of a beautiful library chair from his colleagues in the faculty. In 1898 the students organized a society called the "Middletonian," one of the best societies in the University.

In 1871, Dr. Middleton was married to Sue Y. Modeman and their married life was blessed with six children; Mary Louise, George McClelland, Jessie McKenzie, Edward Duncan, John Gilchrist, and William Drummond.

Dr. Middleton was one of the first physicians of Mercy Hospital in Davenport and was devoted to its interests all his life, having the confidence and devotion of all with whom he came in contact. He was the founder of its training school and president of its board.

COMMUNICABLE DISEASES AMONG THE STUDENTS OF THE UNI- VERSITY OF IOWA

C. R. THOMAS, M.D., Iowa City

By far the most troublesome factor in the work of a university health service is the prevention, detection, and treatment, of the so-called communicable diseases. While the prevalence is not so great as in the elementary and high schools, it is far greater than that usually encountered by the average physician.

The problem is difficult for the university health officer because he is dealing with individuals who are at an age when they pay little, if any, attention to their health; they have not, as yet, developed a public conscience; there is only a nominal authority over them; they are constantly being thrown together in large groups and from group to group, as in classes and in rooming and boarding houses; they are unwilling to give up work until it is absolutely necessary; they must stand the expense of being sent to the isolation hospital; they are not living in their homes and cannot receive proper treatment in their boarding houses; the people running the rooming houses are not willing to take care of them, and their friends are unwilling to report them because it would necessitate their quarantine.

During the past three years the following cases of communicable diseases have been taken care of by the staff of this department:

	1919-1920	1920-1921	1921-1922
Small-pox	30	24	0
Diphtheria	25	14	2
Measles	15	8	1
Chicken-pox	13	7	2
Scarlet fever.....	30	5	2
Mumps	60	9	1
Totals.....	173	67	8

The striking thing about this list is the number of cases of small-pox. It is the only disease in the list which can be definitely prevented and yet it far out-numbers any of the others with the exception of mumps. It is because of the prevalence of small-pox in the University and the State of Iowa that this article is written, in the hope that the physicians throughout the state will co-operate with us in the education and the vaccination of the public against it, and will, as far as possible, see to it that there is general vaccination in the elementary and high schools. Unfortunately there is not a law which will prevent an

unvaccinated individual from entering the university as a student. The attitude of the students, and some of the faculty as well, is one of absolute indifference to small-pox. We have however, with the aid of lectures, bulletins and other means succeeded in persuading the greater part of the student body to be vaccinated during the past three years. We will be able, we hope, to vaccinate almost all of the incoming freshman class; this will greatly increase the number of protected students and will give us a student population which is about four-fifths vaccinated.

Looking at the situation from the economic side we find that the small-pox cases for the year 1920-1921 have lost about 125 school weeks or 2,000 school hours, which are more than enough for three years' work for one student. The aggregate expense amounts to about \$2,500 or enough to pay for five students for one year, or more than enough for one student throughout the four year course. For the year of 1919-1920 these figures would be somewhat larger. This has been in some cases a very effective argument in persuading a student to be vaccinated.

The methods employed to prevent small-pox in the University are: an attempt to vaccinate all unvaccinated freshmen and sophomores at the time they receive their physical examination in the fall and the prompt isolation of all suspected cases. The number who are unvaccinated when they come to the university is surprisingly large and the number who refuse vaccination for various reasons is very much greater than it should be. It is gratifying that, each year, the number who refuse vaccination becomes very much smaller, and also that the number who come to the department throughout the year to request vaccination is constantly increasing. When a case of small-pox develops, all the immediate contacts, both students and others, are vaccinated and allowed to continue their work. Any case which is at all suspicious even in its incipency is quarantined and the contacts are vaccinated, so that it frequently occurs that the contacts show a successful vaccination before the appearance of the eruption on the patient.

The diphtheria cases are next in point of frequency although the situation here is not quite so bad as the figures indicate. At the time of physical examination, nose and throat cultures are made of all students examined. Those showing positive cultures are then tested for virulence and if virulence tests are positive, the students are put under treatment in isolation until cultures are repeatedly negative. Fully half of the cases listed belong to this group. All other cases with

positive cultures but with negative virulence tests, are not quarantined but are put under intensive treatment until cultures are repeatedly negative. All cases which complain of sore throat, hoarseness or any naso-pharyngeal trouble are cultured, regardless of whether or not the clinical signs indicate diphtheria. In this way cases are detected very much earlier than usual. This means a great deal of what might be considered unnecessary work but we have found that it pays. All close contacts are cultured and very close contacts, as roommates, are given immunizing doses of antitoxin without waiting for culture reports.

In dealing with scarlet fever another problem presents itself. There is not any way to protect the contacts by vaccination or immunization, and it is practically impossible to quarantine large groups such as fraternities, sororities, and dormitories for the ordinary quarantine period. In dealing with small schools the problem is much simpler for if necessary they can be easily closed or quarantined; but in a university of 6,000 or more students it is almost impossible to resort to the usual methods. We have adopted the following plan which has so far worked to the entire satisfaction of the health department, students, faculty, and ourselves and has saved untold hardships to the many students who would otherwise have had to undergo the usual long quarantine. The suspected case is promptly removed to the isolation hospital. The immediate contacts—the people living in the same house, using the same dining room and those in the same classes—have to report to this department every day for a period of two weeks. At each visit their temperature is taken, nose and throat examined, and they are inspected for any signs of rash. They are isolated as soon as the slightest symptoms are observed. As long as they report each day they are allowed to continue their classes but if they fail to report they are not permitted to continue in class and must report to the health service before returning to class. So far no cases have developed among the immediate contacts of the original case.

In dealing with all other contagious diseases our method is about the same as that employed in handling scarlet fever.

1. Prompt removal of the suspected case to the isolation hospital.

2. Daily examination of the immediate contacts for a period at least one week beyond the usual period of incubation.

3. The use of mild antiseptic washes for nose and throat of the contacts.

4. The cleaning, and fumigation of the room occupied by the suspected case. We feel that careful cleaning, and airing, and leaving the room unoccupied for two to three days is far more effective than fumigation.

We feel that, after vaccinations, and cultures for the detection of carriers, the greatest factor in the prevention of communicable diseases is isolation in the hospital at the earliest possible moment.

While inoculation against typhoid is advised and is quite desirable it is not so important as vaccination. Any student desiring immunization against typhoid may obtain it at any time and several hundred have availed themselves of this opportunity.

The number of communicable diseases among the students of this University has markedly decreased during the past three years for the following reasons:

1. The great number of vaccinations (the student body is now almost completely vaccinated).

2. The taking of cultures during physical examinations to detect carriers.

3. The prompt isolation of all suspicious cases.

4. Careful supervision of quarantine.

5. The education of the student body in matters of hygiene and the development amongst them of a public health conscience.

6. Establishment of a university health service which has supervision of the general health and surroundings of the students.

IODINES IN THE TREATMENT OF SYPHILIS

ROBERT E. JAMESON, M.D., Davenport
(Practice limited to Skin Diseases and Syphilis)

From time to time we hear a great deal of discussion regarding the use of iodides in the treatment of syphilis. I have had more or less experience in the treatment of syphilis for the past four or five years in the government venereal disease clinic, also in my private practice. The treatment of syphilis during the war when the government venereal disease clinics were opened, the whole idea at that time by most clinics at least was to, if possible, safeguard the public against infection, and when a case was admitted in the government venereal disease clinic in Davenport at least, our sole aim was to make that patient safe in the community, and we, with all cases, as soon as they were proven positive syph-

ilis, to administer mercury and salvarsan or the neosalvarsan; usually each patient was given twelve intermuscular injections of mercury salicylate, sixty to eighty rubs of mercury, either one or the other, and twelve intervenous injections of neosalvarsan, and the following were the results that we did many times find, the reported case will better illustrate the point I wish to make.

A man entered the clinic for an examination for syphilis, he having had the disease fourteen years previous and was treated at Hot Springs, and as he states, advised that he was cured. One year before he came to clinic for examination, he developed a rheumatism in the right hip, it being so painful that he had to discontinue his trade, and wear crutches to get about. We took a blood for a Wassermann test and it showed two plus positive, he was given mercury and patient discarded his crutches, was feeling much better, at the end of three months he said that he never felt better in his life, had gained twenty pounds in weight, and ate and enjoyed his food. After he had three months mercury and salvarsan, he was advised to rest a month and not to take any further treatment, which he did, and we then took blood for a Wassermann and it showed at this time three plus instead of two plus as in the beginning, although this patient had gained twenty pounds in weight, had discarded his crutches, and ate and slept, and had began to work at his trade. I had the above experience many times with patients especially when their history showed that they have had syphilis a year or more standing or had inherited syphilis, and my next thought was to if possible get negative Wassermanns and, after trying various methods I have, and am at this time using the following system of treating most all cases who have a history of having had syphilis a year or more standing, or have inherited syphilis, or who still after a thorough course of treatment, still show a positive Wassermann reaction. Even though they have only had the disease a few months, I then place them in the class with the cases who have syphilis a year or more, and the following method or system of treatment is started.

Potassium iodide, or sodium iodide is given the patient with instructions to take 15 m.m. two and one-half hours after meals in one-half glass of water or milk, and to report at the office at least once each week, but if at any time he notices any unpleasant symptoms to call earlier. In case that a patient can not take the potassium or sodium iodides I have used with good results iodalbin. After the patient has taken two months continuous iodides he is usually started on mer-

cury intermuscular injections and this is continued for three months, the iodides are also given for one month longer with the mercury. After the three months mercury the patient is then started on neosalvarsan or salvarsan intervenous injections at weekly intervals for three months, this makes a total of three months iodides, mercury and salvarsan; the patient is advised to discontinue all treatment for a month or six weeks, and then a blood Wassermann test is made. My experience as stated above had proven to me beyond any question of a doubt that this method of treatment for cases having syphilis a year or longer, or those who have inherited syphilis, will receive better results from above method of treatment and a much larger number of negative Wassermann reactions will be had.

I am led to believe from the above results or the two methods of treatment and results obtained by each method that the germs of syphilis do become imbedded, or encapsulated in the body after the patient has had the disease for a year or longer, or has inherited syphilis and that the mercury and salvarsan administered will no doubt destroy the germs of syphilis which are free in the circulation, but later on germs that are imbedded or encapsulated in the body are thrown off from time to time and that is the reason why we do get positive Wassermann reactions in those cases.

CONCLUSION

All patients with inherited syphilis, or those who have had the disease a year or longer will have the germs of syphilis imbedded in the tissues of the body or encapsulated in the body.

That patients who are given mercury and salvarsan will present a great number who will show the same positive Wassermann reaction, or even a stronger positive Wassermann after a complete course of treatment has been administered, than they did before the treatment was given.

In order to reduce the number of positive Wassermann reactions to negative reactions in all cases of syphilis of one or more years standing, or in those patients who have inherited syphilis, and in some cases, who have had the disease less than one year, it is absolutely necessary to administer iodides before the mercury, or salvarsan treatment is given, in order to free the imbedded germs of syphilis, or those germs which may be encapsulated, so that, when the mercury and salvarsan are administered they will act on the germs.

Patients who have had an arsenic rash following the administration of neosalvarsan show many times a negative Wassermann reaction. In the

past four years I have had seven cases who had a Wassermann test made before treatment was administered show four plus in every case; these cases were all in primary or secondary stages, and 0.3 neosalvarsan was administered and the arsenic rash developed after its administration. They were advised not to have or to take further treatment. All were given a blood Wassermann test one two months after the rash, and in every case, they have showed negative (blood) Wassermann reaction for from two months to two years after. Each case will have, as is our custom, in the government venereal disease clinic in Davenport, to take blood Wassermann tests for three years after treatment has been administered, the first blood Wassermann is taken one month, or six weeks after treatment has been completed, then every six months if negative for three years. If at the end of three years the blood Wassermanns have been negative they are advised to have a spinal fluid Wassermann examination made, if that is negative, they are advised to have a oculist examine their eyes, and if that is negative, the reflexes are gone over, if they too are negative the patient is advised that all tests are negative and as far as we can say that they are cured. But if at any time they may notice any symptoms of a nature to call at the office, we will go over their symptoms and make any examinations that may be necessary in our judgment.

PERSONAL MENTION

Col. D. S. Fairchild, Jr., of the Canal Zone, is now acting department surgeon, with offices at Balboa Heights; Division Surgeon, Ft. Amador; Operating Surgeon, Division Hospital, Corozal.

Rock Rapids, Iowa, May 22, 1923.

Dr. D. S. Fairchild, Clinton, Iowa.

Dear Doctor:

In the May number of the Iowa State Medical Journal, page 214, appears "An Appreciation" of the life of the late Dr. J. E. North and my name appears as though I had written it. This is an error as it was written by the doctor's life long friend Mr. Chas. Shade. My part was only to forward it to you.

I am sorry that my letter was not plain. I will appreciate a correction if it can be published in the "Journal".

Respectfully,
Jay M. Crowley, M.D., Sec'y.

The Journal of the Iowa State Medical Society

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THE PRESENT STATUS OF INSULIN IN THE TREATMENT OF DIABETES MELLITUS

Insulin has now been used in the treatment of diabetes, by individual physicians and clinics for a number of months, and since there is a likelihood of this new specific's being released to the whole profession in the near future, it may be of interest to state, very briefly, the conclusions about the properties and uses of this remedy that may be drawn at this time.

There is a general agreement among all who have used insulin that when the extract is injected subcutaneously or directly into the blood, it promptly causes a catabolism of the body glucose. One unit of the iletin will metabolize from one to as many as seventeen grams of body sugar. The amount of carbohydrate which one unit will oxidize seems to be in inverse ratio to the severity of the disease. (A patient of mine suffering from a very severe form of diabetes requires 60 units of insulin to metabolize 60 grams carbohydrates, 60 grams protein and 190 grams of fat.) The action of insulin upon the sugar is rapid so that the drug must be given just before meals, otherwise a hypoglycemia is likely to be brought about. However it is not at all necessary to give it as long as 20 minutes before a meal.

The most dramatic action of the drug is seen in diabetic coma. This serious complication is, so far as is now known, due to the incomplete burning of the ketone bodies, which in turn, is brought about by the lack of oxidation of the

sugar molecules. One molecule of a simple sugar seems to act as a piece of kindling wood for a molecule of fatty acid. Hence with the introduction of insulin into the tissues, the sugars are burned and with them there is a complete oxidation of the fatty acids so that the poisons responsible for the coma are destroyed and the patient promptly recovers, provided the body cells have not already suffered too great a damage. Therefore the new drug is a specific for diabetic coma. The amount of insulin needed in the treatment of coma is according to Stengel¹ never more than 40 units per day. Since the insulin, once it has entered the body tissues, rapidly catabolizes the carbohydrates, it becomes necessary to feed the patient enough sugar-containing food in order to prevent hypoglycemia. This can best be done by feeding orange juice or sugar solution by mouth if the patient can take it, otherwise the glucose solution can be given by rectum, or in rare instances, intravenously. 100 grams of carbohydrates per twenty-four hours will more than handle all the fatty acids which the body will attempt to oxidize in that length of time. The administration of plenty of fluids to coma patients is as necessary now as it was in the pre-insulin days.

To severe diabetics the iletin is a veritable resurrection. Hitherto there existed a class of patients, mostly among the young, who, in spite of anyone's treatment, lost weight and lost strength, or, who could barely keep alive in a state of under nutrition if they remained in bed most of the time. The diet which such patients metabolized was essentially similar whether they were on Allen's, Joslin's, Newburgh's and Wood-yat's diet, that is, they were given as much sugar as they could oxidize and as much fat as could be burned without the appearance of acid bodies. But since the total calories thus obtained was below the need of the body, such patients were doomed to succumb and the price they paid for a short prolongation of life was semi-starvation with death at the end. Now all this has been changed. For, by regulation of the amount of insulin given, the required number of calories may be secured, not only for the sustenance of life, but also enough for the work an individual is called upon to perform, so that growth is resumed in children, and health and vigor return to all. The principles of the feedings established for the diabetics are not in the least altered by the introduction of this wonderful specific, that is, the patient is still kept on a safe but low protein feeding. This, in children, is about 10 to 13 per cent of the total calories and in adults about

1. Stengel—Statement made to members of the Tri-State Clinics.

six-tenths of a gram per kilogram of body weight. Then by feeding fat until acetone appears in the urine, it can easily be determined just how much carbohydrate the patient should be fed in order to secure the number of calories needed, and enough insulin must be administered so that this amount will be oxidized.

There is still another group of diabetics to which insulin is a blessing, namely, the class of moderately severe cases where a rather rigid diet consisting of 5 and 10 per cent vegetable and fat must be adhered to in order to keep sugar free. Such a diet is, to say the least, very monotonous and the patient is deprived of a good share of the joys of life. To such individuals an ordinary meal once a day ought to make life worth living and a hypodermic of iletin makes this possible.

The dangers and disadvantages of iletin are actual ones but they are not insurmountable. Any good physician, who has mastered the diabetic management of today ought to be able to avoid the dangers; and the disadvantages, as now known, will undoubtedly be done away with in the near future.

The principal disadvantage of this drug is its subcutaneous administration. This becomes somewhat of a bore in severe cases where it must be given three and even four times per day and under close surveillance in the hospital. In moderately severe cases once a day suffices and here the patient or his people may be taught to give the drug with safety. In such instances common sense dictates that the insulin should be given with the heavy meal of the day. It is not exhibiting too much faith in our profession to state that soon, perhaps very soon, the drug may be given per os without losing its potency.

The danger of the insulin treatment lies in the development of a hypoglycemia when too much of the drug has been given for the available carbohydrates. The symptoms of this condition as given recently by Joslin² are in the order of their appearance: (1) hunger; (2) restlessness; (3) sweating; (4) stupor, and (5) convulsions. These may follow each other in rapid sequence. They must be carefully explained to the nurse and the patient. They set in when the blood sugar drops to .07 per cent. The treatment is rapid administration of carbohydrates, either in the form of orange juice, sugar or glucose solution per mouth, or if the patient is unconscious, then as glucose intravenously or by rectum. In severe cases .5 c.c. of 1-1000 adrenalin chloride may also be given. The recovery is usually spectac-

ularly rapid. It is, as yet, too early to tell what effect the insulin has on the carbohydrate tolerance. There is no evidence at hand which points to a lowering of the tolerance and it is to be hoped that the new treatment will improve it.

Glomset.

SOME OF THE PROBLEMS RELATING TO THE PRACTICE OF MEDICINE

The New York Times not long ago published an article touching the problems of the medical practitioner and also presented some of the problems confronting the public. These problems are not far apart.

The physician, as a general rule, enters the medical profession to earn a living and also because the work of a practitioner of medicine is congenial to his tastes. It is probable that some young men are attracted to medicine because of the assumed profits, and others to escape the hardships of a supposed more strenuous life and to secure a more assured social status; with these we have nothing to do. It is only with those who study medicine for the sake of an honorable employment and living, in a chosen profession which appeals to them. He spends a considerable amount of money in securing his medical education, and in the end, is confronted with certain disappointments soon after he enters upon the field of practice. He had heard of these things before, but when his turn came he felt that he could meet the difficulties with success. But the hopeful young man is liable to disillusionment, the people were not waiting for him at all; they were looking for some one who could pledge a cure without a troublesome cooperation on their part. In his medical course he had been instructed by his conscientious professor that he could not promise a cure, but his new-practice neighbor would venture a promise to cure which would come true in about 75 per cent of cases. He found that more enlightened legislation had placed certain restrictions about the qualifications of medical practice which interested new-practice doctors were endeavoring to have removed, and to his astonishment, many apparently intelligent people were supporting the new idea in medicine.

He now turns to some specialty, locates in a large town or city and attempts to make the most out of it possible. This is a real loss to the doctor and the public he desires to serve. According to the writer in the New York Times, this condition in medical practice began

². Joslin—Statements to members of the Tri-State Medical Clinics.

in 1900, which is designated as "the high water period in the practice of medicine."

At this time the cost of a medical education was not great. The doctor was more a psychologist than a practitioner of medicine. There were an abundance of doctors; all small towns, large towns and cities were well supplied. But now the progress of medical science grew rapidly, and soon longer and more extended courses of medicine were necessary, involving greatly increased expenditure of money; then came standardization of medical colleges. It was now that new and strange ideas of medical practice began to multiply. There came also industrial development and the need of industrial medical service, and the doctor and the public began to drift apart. There are many medical philosophers with remedies for the condition, but there appears, however, to be but one way, and that is to work out the problem with patience in the line of education. Our problem is only the problem of other activities. Legislatures, including congress, may attempt to set aside natural laws in economics, but generally only to increase the difficulties. Medical science will never be at a discount, but it may be quite different with medical practice.

There are two things that are quite apparent, one is that the doctor must make a living, unless he has an independent income; the other is that the people must have medical service, competent or otherwise. How shall this be brought about? We do not know; somehow, we are quite confident. But in the meantime, where are we? Some statements will show where we are.

"The New York State Department of Health reported in 1921, 165 localities which had no doctor and that in 823 communities there was not a physician who had been out of college less than twenty-five years. Out of eighty-two applications for physicians from thriving villages and hamlets in New York, physicians were obtained for only half. The same situation exists in many other states."

Between 1911 and 1919 in the rural districts of New York there was a falling off of 403 doctors, or 13.6 per cent, although the population had gained 7 per cent.

The industries pay from \$1,500 to \$3,000 a year for full-time service. Public health and school physicians receive from \$2,000 to \$3,500 full-time service.

In eight states bills have been introduced to compel physicians to furnish medical care at 25 cents to 50 cents a call for about one-

fourth of the population employed in our industries.

Assuming that a modern medical education costs from \$30,000 to \$40,000 including money cost, interest and time; how is it possible for a doctor to live and pay the cost of his education at the rates the public is willing to pay?

The London Lancet within a year has stated that a young man has no right to enter upon the study of medicine unless he has an investment of \$75,000. This in England, but not less so in the United States.

There is no out and out remedy for this condition. The public cannot force young men to become physicians, nor can any kind of propaganda force the public to treat the medical profession better, it must come about by a process of evolution and in a friendly manner. We must set about for ways and means in our own individual sphere, to show the body-public our good intentions and increase our usefulness. Our efforts to dictate legislation has failed utterly in the last few years, and our sphere of usefulness should be to increase our facilities to render better service and to prevent adverse legislation which may retard scientific investigation in the field of medicine and increase the danger of the spread of the infectious diseases.

The really serious danger from the public, is that the public may endeavor to secure medical service by legislation in the direction of state medicine, at terms that will be disastrous, we must show a spirit of united effort in our work and a better organization, not, perhaps, in our public clinics, but in our society work.

The Proceedings of the House of Delegates will be found in this number and should be carefully read.

The most interesting will be the report of the Field Activities Committee. Unfortunately there is no stenographic report of the discussion, therefore the views of individual members will not be fully obtained.

The Report was not very definite for the obvious reason that no definite plan had been outlined, it being in the nature of an "experiment." As near as we are able to make out, the Committee contemplate straightening out the crooked places in the practice of medicine and of correcting the causes of unhappiness incident thereto. Inasmuch as evils are numerous and vary at different times and places, it is not strange that committees endowed with human

wisdom only, should be at a loss to make things clear.

Shortly after the close of the late war, when many members of the medical profession had generously offered their services to the public, on returning home found society sadly disarranged and everybody busy in adjusting himself to the changed conditions, soon discovered that the medical profession was no exception, and at once ascribed the unfortunate condition to the war, but as a matter of fact the suddenly discovered conditions were well on their way when the war came upon us, but were now suddenly precipitated and the orderly process of evolution seriously disturbed. This was not a new experience in the history of the world, but because of the more complex organization of society and because of the comparatively long period of the orderly process of evolution, the world was more seriously upset than before.

We may only go back as far as the discoveries of Pasteur, the work of Lister and the numerous other workers, to mark a new era in the history of medicine. The acceptance of the infectious origin of most diseases, and that infection comes from without and not from within, as was at one time believed, and that it is possible by proper means to destroy or otherwise exclude the infectious cause of disease and thus prevent, cure or modify disease, the whole aspect of the practice of medicine changed. When it was believed that disease developed or was generated within the body, we were helpless, except as we comforted ourselves by the use of drugs. The knowledge we now have of disease did not come upon us at once, but by degrees, and we adjusted our practice accordingly.

The whole plan of medical education gradually changed, men became surgeons and specialists, they abandoned small towns and country places and sought centers of population, competition became intense, doctors and other people from allied causes became restless; then the war came and the adjustments which might have come about in an orderly manner, were completely upset, not with doctors only, but with other people as well. All the history of the world shows that relief has come from the orderly process of evolution. But this is slow; we naturally seek some rapid, even if artificial, means of adjustment, and if one is influenced by the revelations of the past, he is looked upon as antagonistic and out of tune with progress, nevertheless the results are always the same.

Covering this period there has been the same general restlessness. The working man has been dissatisfied with the wages paid and the conditions of employment, he has formed unions, has inaugurated strikes as his expression of restlessness. Tradesmen have organized to stabilize prices of commodities. Professional men have organized to stabilize practice and promote the disseminating of knowledge and to promote public welfare. All this may be necessary, and successful, when for the purposes of welfare, and has often been a stimulus to the processes of evolution.

When, however, these processes are hurried in a restless manner by restless men, we are liable to lose sight of the laws of evolution, which have carried men along from one stage of development to another in an orderly manner and it has brought waste and confusion. The restlessness of working men has not abated in consequence of unions and strikes, but new experiments are ordered. The increased profits of tradesmen has not relieved the restlessness, for still greater profits and better conditions are looked for.

The advanced conditions of medical education, increased means of diagnosing and treating disease and the increased comfort of practice has not relieved the restlessness of physicians, but new experiments are inaugurated to get on faster. Where? No one knows. We must not "Stop, Look and Listen," but hurry on.

We are not prepared to say the experiments are useless and wasteful; something will no doubt come out of all this waste, but how much? We must certainly meet some disappointments, perhaps many. One of the serious handicaps is the wide divergence of opinion and the lack of men of sufficient wisdom to point the way. Take, for instance, the Federal Maternity Law. Our committee points to the passage of the supplementary Maternity Bill by the Iowa legislature as an outstanding victory for the Field Committee, while every medical journal in the country that has mentioned it, condemns the Federal law, and many states have refused to accept its provisions. We have printed both the Federal and the Iowa bill in the June number of the Journal for the information of our members and we invite them to examine the bills carefully for evidence to show what provisions are made that will lessen the danger of the poor unfortunate woman in her hour of trial. We are free to admit that infant and maternity mortality are too high

and would welcome any measure that will serve to lessen the death rate, but we fail to find any reference to the relief of those who sorely need it. There is abundant provision for office expenses and its corps of advisors.

Wm. Harvey did not discover the circulation of the blood by experiment but rather proved his logical reasoning by experimental evidence. Pasteur did not believe that tartaric acid was right and left hand to polarized light indifferently, but that there was another acid which he demonstrated by experiment. The same is true of his other great discoveries. The logic of reasoning and facts took first place and demonstration by experimentation followed.

Let us by the logical processes of thought determine our course and then proceed slowly and carefully by experiment if necessary to prove our conclusions. Morse knew that words (signals) could be conducted by the electric wire. Marconi believed that signals could be conducted by wireless, and so was evolved radio—broadcasting and receiving. Thus it has been and will be that logical and definite plans must come first.

When the plans of reorganization of the American Medical Association and the State Medical Societies were worked out, they were put into operation as something of an experiment it is true, but a definite and well organized plan had been formulated; the same is true of the Council of Medical Education, the College of Surgeons in standardization of hospitals, etc.

This editorial is not offered in the spirit of opposition to the Field Activities now on foot, but as a warning. We are fully aware that many county medical societies are not functioning properly, but the fault lies, as we see it, in individual indifference of physicians. How may they be reached, how may we appeal to the pride and loyalty of the individual members? How may we overcome the long list of absent delegates at our annual sessions?

We have patience with our Field Activities Committee for their short-comings because of the extremely difficult task and their short time. They have had abundant warning in the House of Delegates. Something more than dramatic demonstrations are necessary, because serious matters are under consideration. They must take into consideration the natural laws of evolution. They must consider what has happened in the past, not to turn back, but to project the past into the future. It must not

be an experiment to be abandoned when the experiment apparently fails, but to present something tangible and logical that will appeal to the future. Let us have something definite and clear, something we can understand, something that should and must be done, and not dramatic and illogical demonstrations. It has been intimated that if "joining in" with lay activities we will accomplish good, let us do so. We are quite agreed to such a proposition, but we should be quite certain that we are not in the hands of lay propagandists for personal ends.

The Journal was criticised for an editorial in the March number for setting forth the best medical opinions on the decline of tuberculosis. It was not contended that this editorial misrepresented the facts, but it was inopportune at the time the legislature was in session. It is not quite clear that this was a sufficient reason when important medical facts are involved. The suppression of such facts will not contribute to the good name of the profession. We still hold to the contention that our relation to tuberculosis should be in the nature of the scientific study of the disease, its origin, means of transmission, questions of immunity and scientific treatment. The questions of anti-tuberculosis propaganda should reside with anti-tuberculosis societies and welfare organizations. The moment we divert our energies as an organization, from purely professional work, we will fall into confusion. Propaganda work is certain to be controversial and lead to serious differences of opinion and loss of interest. So-called welfare work belongs to separate organizations and should be entirely divorced from our State Medical Society activities. Our official relations with these organizations will bring us untold difficulties and expenses. The Wisconsin State Medical Society has been led to raise its dues to \$10.00 and the Oregon State Medical Society to \$20.00, and if we are forced to follow this example we shall suffer a serious loss of membership, not only on account of increased cost of membership, but from the interminable controversies that are certain to arise. This is foreshadowed by the claims recently made by our Field Activities Committee that they were the main influence in securing the passage of the appropriation bill for the University. This statement is unfair and untrue and ignores the interest and activities of a host of interested ex-university students and the friends of medical education in Iowa. Personally we are willing to be taxed for any rea-

sonable welfare measure, but maintain our identity.

It is to be sincerely hoped that the progressive, conservative and diligent members of the Iowa State Medical Society which has just passed its seventy-first birthday, will see to it that the Society does not drift into the hands of strangers and be diverted from its long years of honorable professional usefulness.

SOME THINGS ACHIEVED BY FIELD ACTIVITIES OF THE IOWA STATE MEDICAL SOCIETY DURING THE NINE MONTHS IT HAS BEEN IN OPERATION

1. It has gathered the scattered factors of numerous problems confronting the medical profession, reduced them to the form of clearly stated propositions with definite objectives, and formulated working plans for attainment of such objectives.

2. It has promoted closer and more effective cooperation between the officers, the Council and the Standing Committees of the Iowa State Medical Society.

3. It has demonstrated not only the possibility but the desirability of effecting sustained cooperation between medical and other organized forces concerned with related activities.

4. In substantiation of the foregoing declaration are the results of endeavor directed to legislation. Every act of the Fortieth General Assembly relating to scientific medicine, curative as well as preventive, was in effect, a vote of confidence in the medical profession (and by the same token, a challenge to the medical profession of Iowa).

5. In further substantiation of paragraph 3: is the fact that through such cultivation of cooperative working relations the formerly scrambled mess of well meant but not infrequently misdirected activities in the interest of health conservation (including the putting on of clinics of one kind or another) have been brought into alignment and, presuming that the component County Medical Societies promptly and whole heartedly participate in the State Society's program, the above mentioned well meant but sometimes misdirected activities will be conducted either as part and parcel of, or in close cooperation with the Iowa State Medical Society's Field Activities program.

6. A service bureau for the County Medical Societies, made possible by success of the effort to effect cooperation between medical and other organized forces. This bureau was created to encourage and assist County Medical Societies to formulate and carry out a definite program of real value

to the members, a program that would provide clinics and demonstrations dealing with subjects of greatest importance to the "rank and file" of the medical profession.

This Bureau also undertakes to supply—with but little if any expense to the County Societies—the services of capable lecturers and clinicians.

7. It has made gratifying progress in a study of the hospital situation in Iowa—a study undertaken with a view to facilitating solution of problems relating to adequate supply and equitable distribution of necessary physical equipment, assured support of existing and prospective institutions and uniformly creditable standards of service in all hospitals throughout the state of Iowa.

8. All the above and numerous other services of considerable present—and certainly great prospective value to the medical profession and to the public at large, the Iowa State Medical Society as rendered during the year past and has provided to continue through the ensuing year, without calling upon its members for so much as a penny in the way of additional dues.

9. The officers, the Board of Trustees, the Legislative Committee, and the Council have worked concertedly with the Field Activities Committee to make the Iowa State Medical Society a sustainedly and efficiently functioning institution that should not only render service of real value to all members of each and every component County Society but that should encourage and assist every County Medical Society to develop as a respect commanding and confidence deserving force in its own county.

The success already attained in effecting mutually advantageous cooperation between the State Medical Society and numerous other state organizations and institutions concerned with related activities gives support to the belief that like cooperation no less mutually advantageous can be effected between the County Medical Societies and other organizations and institutions of their own communities.

10. The Iowa State Medical Society has carried this movement to the stage where the permanence of advantages already gained and the realization of far greater advantages potential in present opportunities must wait upon and be determined by the men and women who constitute the membership of the County Medical Societies.

MEETING OF THE TRI-STATE DISTRICT MEDICAL ASSOCIATION, DES MOINES

The Tri-State District Medical Association—Iowa, Illinois, Wisconsin, Minnesota and the districts of surrounding states—will meet in annual session in Des Moines, October 29, 30, 31 and November 1. This session will afford an excellent opportunity to the physicians of Iowa in the fine scientific program that will be presented.

**Minutes of the Iowa State Medical Society,
Seventy-Second Annual Session,
May 9, 10, 11, 1923
Ottumwa**

Wednesday, May 9, Morning

The Seventy-second Annual Session of the Iowa State Medical Society was held in the assembly room of the Wapello Club, Ottumwa, May 9, 10, 11, 1923.

The Society was called to order at 9:15 o'clock by the President, Dr. Charles J. Saunders, Fort Dodge; the meeting was opened with invocation by Rev. Henry J. Hogan, Ottumwa. Hon. W. E. Hunt, City Attorney, gave the address of welcome for the city, following which Dr. William J. Herrick, Ottumwa, President of the Wapello County Medical Society, on behalf of the local profession extended to the visiting members an address of welcome, response being made by Dr. Frank E. Sampson, Creston.

Dr. Edwin R. Shannon, Waterloo, read a paper on "Our Present Knowledge of Spleen Function and its Relation to Spleen Surgery." Discussed by Drs. Oliver J. Fay, Des Moines; Malcolm L. Harris, Chicago; William Jepson, Sioux City, and V. L. Treyner, Council Bluffs, Dr. Shannon closing the discussion.

Dr. W. L. Bierring moved that the courtesies of the floor be extended to the distinguished visitors in attendance. The motion was seconded, and carried.

Dr. Jacob S. Weber, Davenport, read a paper on "A Surgical Study of Gastro-Duodenal Ulcers." Discussed by Drs. Charles J. Rowan, Iowa City, and Walter L. Bierring, Des Moines, the essayist closing the discussion.

Dr. Lee F. Hill, Des Moines, read a paper on "Diphtheria, Its Diagnosis, Complications and Treatment." Discussed by Drs. L. R. Woodward, Mason City; Don M. Griswold, Iowa City; Walter L. Bierring; M. L. Turner, Des Moines; and by Dr. Hill, in closing.

Dr. Lester C. Kern, Waverly, read a paper on "Tuberculous Peritonitis and Its Treatment." Discussed by Dr. Paul A. White, Davenport.

Address of Chairman of the Section on Medicine was given by Dr. Frank J. Rohner, Iowa City.

Wednesday, May 9, Afternoon

The meeting was called to order at 2 o'clock by the President.

The Oration in Surgery was given by Dr. Elbert E. Munger, Spencer.

Secretary Throckmorton announced the receipt of a telegram from Prof. Seashore, Iowa City, stating that it would be impossible for him to be present Wednesday, and requesting that, if possible, his paper be transferred to the Thursday session. Upon motion by the Secretary, duly seconded, Prof. Seashore's request was granted.

The Secretary further moved that inasmuch as both the author of paper No. 11 of the program and the confrere who is to open the discussion have seats

in the House of Delegates, which meets at 4:00 o'clock, this paper be transposed on the program to take the place of No. 7.

The motion was duly seconded, and carried.

Dr. Arthur W. Erskine, Cedar Rapids, read a paper on "The Management of Cancer of the Breast." Discussed by Drs. Thomas A. Burcham, Des Moines; Donald Macrae, Jr., Council Bluffs; M. L. Harris, Chicago; J. F. Herrick, Ottumwa; William Jepson, Sioux City; A. L. Yocom, Jr., Chariton, and E. C. Junger, Soldier, Dr. Erskine closing the discussion.

The Address on Surgery—"The Diagnosis of Some Surgical Conditions," was given by Dr. Malcolm L. Harris, Professor of Surgery, Chicago Polyclinic, Chicago, Illinois.

In response to suggestion of the President, a rising vote of thanks was unanimously tendered to Dr. Harris for his paper.

President Saunders retired to attend the meeting of the House of Delegates, Vice-President George Kessel presided during the remainder of the session.

The following papers were read:

"Acute Osteomyelitis, with Special Reference to the Histology of Growing Bones" (with lantern demonstration), Dr. Arthur C. Stokes, Omaha (by invitation).

"Osteomyelitis Secondary to Foci in the Skin," Dr. Clarence E. Lynn, Dubuque.

These two papers were jointly discussed by Drs. William Jepson, Sioux City; Howard L. Beye, Iowa City; S. A. Spilman, Ottumwa; Frank M. Fuller, Keokuk; Donald Macrae, Jr., Council Bluffs; E. C. Junger, Soldier; Otto Svebakken, Decorah; Charles J. Rowan, and by Drs. Stokes and Lynn in closing.

Mr. George Judisch of Ames, President of the Iowa Pharmaceutical Association, gave a short address in which he touched on matters of mutual interest, especially emphasizing the service which the pharmacist may render to the physician in his every day work.

Wednesday, May 9, Evening

In the Assembly Room of the Wapello Club, President and Mrs. Saunders received the members of the profession and their friends, the occasion proving to be a most enjoyable feature of the annual social evening. Rev. L. A. Swisher of Ottumwa gave a very interesting address, following which the Ottumwa Choral Society of 160 voices favored the audience with selections from the Oratorio "Elijah," conducted by Miss Cleve Carson, Director of Music in the Public Schools, Ottumwa.

The last number on the program consisted of reminiscent talks by Drs. Max E. Witte and Lewis Schooler, following which Dr. D. C. Brockman, on behalf of the profession of Iowa, presented to Dr. D. S. Fairchild, veteran Editor of The Journal of the Iowa State Medical Society, a gold pen, expressing the hope that this memento would not only assist him in his work, but symbolize the love and esteem in which he was held by his confreres. In a brief address Dr. Fairchild thanked the speakers for their

kind words, and expressed to the profession of Iowa his appreciation of the gift.

Thursday, May 10, Morning

The meeting was called to order at 9 o'clock by Vice-President Kessel.

It was moved by Dr. E. L. Rohlf, Waterloo, that in the unavoidable absence of Dr. Guy T. McCauliff, Webster City, his paper on "Chorioepithelioma of the Uterus Following and Resulting from Hyatid Mole," be read by title and referred to the committee on publication. Motion seconded, and carried.

Dr. Martin I. Olsen, Des Moines, read a paper on "Present Day Needs in an Examination for Life Insurance." Discussed by Drs. Wm. L. Allen, Davenport; J. H. Chittum, Wapello; Geo. E. Decker, Davenport; M. L. Turner, Des Moines; James T. Priestley, Des Moines; Ross Houston, Des Moines; W. W. Bowen, Fort Dodge; Clay D. Fellows, Algona; Jacob S. Weber, Davenport; E. C. Junger, Soldier; Frank A. Ely, Des Moines, and Geo. E. Crawford, Cedar Rapids, Dr. Olsen closing the discussion.

The House of Delegates having adjourned, President Saunders presided during the remainder of the session.

Dr. Albert A. Schultz, Fort Dodge, read a paper on "Renal Tuberculosis." Discussed by Drs. Donald Macrae, Jr.; W. W. Bowen, Fort Dodge; E. L. Rohlf, Waterloo; Charles H. Magee, Burlington; Charles E. Ruth, and J. E. Dyson, Des Moines, and by Dr. Schultz in closing.

Dr. Samuel T. Orton, Iowa City, read a paper on "General Paresis." Discussed by Drs. Max E. Witte, Clarinda; Tom B. Throckmorton, Des Moines, and Archibald Church, Chicago, Dr. Orton closing the discussion.

Address on "Epithelioma of the Face" was given by Dr. William W. Bowen, Fort Dodge, Chairman of the Section on Surgery.

Thursday, May 10, Afternoon

The meeting was called to order at 2 o'clock by the President.

The Oration in Medicine—"The Four Branches"—was given by Dr. Frank M. Fuller, Keokuk.

Dr. Carl E. Seashore, Iowa City (by invitation), read a paper on "A Medico-Psychological Survey of Morons in Iowa." Discussed by Drs. Frank A. Ely and Fred Moore, Des Moines; Max E. Witte, Clarinda, and D. C. Brockman, Ottumwa, Dr. Seashore closing the discussion.

On motion by Dr. Tom B. Throckmorton a rising vote of thanks was unanimously extended to Dr. Seashore for his presentation.

The President: Members of the Society, it is with a great deal of pleasure I introduce to you the President of the Illinois State Medical Society, Dr. Sloan.

Dr. Edwin P. Sloan, Bloomington, Illinois: It is indeed a great pleasure to me to meet the physicians of Iowa. The profession of Illinois are in very close

sympathy with the profession of Iowa and the things you are accomplishing here. You have our best wishes and most fraternal greetings, and we ask all of you to meet with us next week at Decatur, Illinois. We will do our best to show you a good time, but I am sure we cannot present such a remarkably good program as you have had here.

Dr. Frank E. Sampson, Field Director, Creston, presented "A Review of the Work, Present Plans and Prospects of the Medical Field Activities Committee," with lantern demonstration. The paper was discussed by Drs. Walter L. Bierring; Donald Macrae, Jr., and Charles H. Magee, the essayist closing the discussion.

The Address in Medicine, which was to have been made by Dr. Charles F. Hoover, Professor of Medicine Western Reserve School of Medicine, Cleveland, but who was unable to be present because of illness, was given by Dr. Archibald Church, Chicago, his subject being, "The Healing Principle in Fads and Follies."

Dr. Walter L. Bierring moved that a rising vote of thanks be extended to Dr. Church for his inspiring address. The motion was seconded, and unanimously carried by rising vote.

It was further moved by Dr. Bierring that, appreciating the many friends Dr. Hoover has in Iowa, the Secretary be instructed to send him a cheerful message of sympathy and heartiest greetings from his many friends of the Iowa State Medical Society, with sincere wishes for his speedy recovery.

The motion was seconded, and carried.

Papers were read, as follows:

"Suppurative Pleurisy," by Harold A. Spilman, Ottumwa. The paper was discussed by Dr. Alanson M. Pond, Dubuque, and Dr. Spilman in closing.

"The Anemnesis and Its Place in Diagnosis," by Dr. Julius S. Weingart, Des Moines. No discussion.

"Diseases of the Ischio-Rectum," by Dr. Anthony P. Donohoe, Davenport. The paper was discussed by Dr. Coral R. Armentrout, Keokuk.

Thursday, May 10, Evening

The meeting was called to order at 8:15 by Vice-President Kessel.

President Charles J. Saunders read his Address.

The Guest of Section on Ophthalmology, Otology and Rhinology, Dr. H. I. Lillie, Chief of the Ear, Nose and Throat Section Mayo Clinic, and Professor of Otorhinology in the Mayo Foundation, Rochester, Minnesota, read a paper on "Some Practical Considerations of the Physiology of the Upper Respiratory Tract."

The President: I am sure I express the opinion of the Society when I extend to Dr. Lillie our warm thanks and appreciation for this address.

The following members were appointed a committee to review and report upon the President's Address:

Drs. Walter L. Bierring, D. C. Brockman, and William Jepson.

Friday, May 11, Morning

The meeting was called to order at 9:30 by Vice-President Kessel.

The following papers were read:

"Operative Fractures" (lantern demonstration), by Dr. Charles S. James, Centerville. The paper was discussed by Drs. John C. Rockafellow, Des Moines; F. L. Nelson, Ottumwa; W. W. Bowen, Fort Dodge; S. A. Spilman, Ottumwa, and Charles E. Ruth, Des Moines; Dr. James closing the discussion.

The House of Delegates having adjourned, President Saunders presided during the remainder of the meeting.

"Final Results from Treatment of Fractures of the Arm" (lantern demonstration), by Dr. Channing E. Dakin, Mason City. The paper was discussed by Drs. W. W. Bowen, Charles S. James, and Charles E. Ruth, the essayist closing the discussion.

"Pyelitis of Pregnancy" (lantern demonstration), by Dr. Frederick H. Falls, Iowa City. Discussed by Dr. A. C. Page, Des Moines, and Dr. Falls, in closing.

It was moved that, because of the lateness of the hour, the three remaining papers of the program receive no discussion. The motion was seconded, and carried.

"Creatinin—Its Clinical Significance," by Dr. Caryl L. Nelson, Waterloo.

"Some Remarks on the Status of Present Day Obstetrics," by Dr. Evert C. Hartman, Algona.

"Masked Infection Passing as Neurasthenia," by Dr. Paul J. Van Metre, Rockwell City.

Report of the transactions of the House of Delegates was then presented by the Secretary. Upon motion, unanimously carried, the report was accepted.

SUMMARY OF PROCEEDINGS OF THE HOUSE OF DELEGATES

According to the By-Laws, the Secretary of the State Society must bring before the general session a summary of the work which has been accomplished in the House of Delegates. In compliance with that order, I now take pleasure in giving you, briefly, an outline of the proceedings of the House of Delegates during this annual session.

At the first meeting of the House of Delegates, which occurred Wednesday, nothing of special interest came up with the exception of the reception and acceptance of reports of the various officers and some of the standing committees.

At Thursday's meeting, the Committee on Public Policy and Legislation reported as to the work accomplished during the past year. Report of the Field Activities Committee was presented by the chairman, Dr. W. L. Bierring, and also a supplementary report was made at this time concerning the problem of financing the activities of this work during the coming year. The chairman suggested that funds for the committee should be provided on the same plan as that employed last year: that is to say,

through the appropriation of a certain sum of money by the House of Delegates; or that the By-Laws be changed and the annual dues of the Society increased two dollars, or that a special assessment of two dollars be levied upon the members, or that the action of financing the work of the committee for the coming year be deferred at this time, the delegates to talk the matter over at the county society meetings and come back next year with the idea of increasing the dues three dollars. For specific reasons the director and chairman requested that action on the reports be deferred until the Friday meeting.

Dr. Rockafellow, one of the delegates to the House of Delegates of the A. M. A., and also Dr. Eiker, alternate delegate, gave a report concerning the activities of the House of Delegates of the A. M. A. last year.

New business came up in the House relative to what the State Society wished to do concerning the use of Government money in training veterans in the art of chiropractic. Also a resolution was asked for by the Counsel to the Select U. S. Senate Committee on Investigation of the Veterans' Bureau as to whether it would be possible to secure, throughout the State of Iowa, men who were well qualified to act as special advisors to the Bureau which has to do with matters affecting the welfare of disabled veterans. Both of these matters were referred to committees and their report was made today at the meeting of the House of Delegates.

The first order of business of the House of Delegates after acceptance of the minutes for the meetings of Wednesday and Thursday was the presentation of report of the Nominating Committee, whereupon the following officers were elected for the ensuing year:

President-Elect, Frank M. Fuller, Keokuk.

First Vice-President, H. B. Gratiot, Dubuque.

Second Vice-President, W. E. Long, Mason City.

Treasurer, A. C. Page, Des Moines.

Editor, D. S. Fairchild, Clinton (to succeed himself).

Re-elected on the Board of Trustees: T. E. Powers, Clarinda.

Delegate to the A. M. A., M. N. Voldeng, Woodward.

Alternate Delegate to the A. M. A., A. M. Pond, Dubuque.

Of the committees, both standing and special, the same men were re-elected to hold office during the coming year.

Des Moines was selected as the meeting place for 1924, the dates being May 7, 8 and 9.

Finally, the question of adoption of the report of the Field Activities Committee, which was made yesterday, came up for consideration, and considerable discussion took place as to the best way to finance the problem. I think the delegates were largely swayed in their voting by the report of Dr. Bierring and Dr. Sampson and also by the statement of the Trustees that they believed the best thing to do was

to finance the committee as done last year—by appropriating a sum not exceeding \$7,500, and it was further recommended that in their respective communities the members of the Society should spread the gospel of enlightenment to their benighted brethren who had been obliged to stay away from this meeting, and to come back next year with some formulative plan to help finance this work, if the Field Activities Committee still feels it is a work that should be continued. Therefore it is essential for each and every one of us who are in hearty approval of the continuance of the activities of this committee, or otherwise, to go home and take the matter up in the various county societies and get some expression of opinion from the members there, to the end that next year the delegates may have some idea as to how the local societies wish them to vote on the question of the Field Activities Committee.

In closing I might state that it is a matter of gratification to the Scientific Committee that all of the papers on the official program have been read with the exception of two: one essayist was unavoidably absent, and one paper was read by title. I think this is a very exceptional record.

I also wish at this time, Mr. President, to move a vote of thanks to the members of the Wapello County Medical Society for the very cordial and hearty greeting that has been extended to the visiting members of the Iowa State Medical Society, and to thank them as best we can for the kindly welcome and splendid entertainment we have received at their hands; and further, that we bid them, each and all, to come to Des Moines next year and to partake of the scientific pabulum and such other social food as we may have prepared for them in return for this hospitality.

(The motion was seconded, and unanimously carried.)

The registration of the session shows the presence of 513 physicians, visiting ladies and guests."

Tom B. Throckmorton,
Secretary.

President-Elect Oliver J. Fay, Des Moines, was then inducted into office as President of the Iowa State Medical Society.

President Fay: Members of the Iowa State Medical Society, it is needless for me to say that I am indeed very happy to assume the leadership of this Society. There is no better state medical society anywhere in the United States than this Society. Those of you who have attended our meetings over a period of twenty years must be impressed with the fact that the men and women who practice medicine in the State of Iowa are gradually becoming better and more thoroughly equipped and present much better programs before the Society than in former years. From this platform yesterday afternoon you heard Dr. Sampson, with oratory, humor and wisdom, tell you of the unsolved problems that confront not only this Society, but the profession

throughout the country as well. It is, therefore, needless for me to say to you that these problems must be met, and met fairly and honestly, that we may have a still better profession than that which we now have.

I wish to call attention to the fact that the legislature of Iowa meets in special session next December. During that session, which will continue over a period of three or four months, undoubtedly a new Practice Act will be written into the statutes. That Practice Act, when once written, will probably remain there for a long time. You are aware that the law as proposed is one which is very objectionable to scientific medicine, and if we are to have a real Medical Practice Act, covering a period of many years to come, it is incumbent upon every man who believes in scientific medicine to help put that Practice Act through. In order to have the right influences at work, you must reach the individual member of the legislature before he comes to Des Moines. He must have your help in medical education.

President-Elect Fuller: Mr. President, Members of the Iowa State Medical Society: I have been coming here for a number of years and each year I have had a very definite feeling of pleasure in seeing my friends, Dr. Fay and the long list of men who have preceded him, elected to the office of President of this Society. But it is a good deal like having the first baby—when you get there yourself you have a very different sensation. It is a pleasure, it is true. No man could ever get away with trying to be modest and saying he would not like to have this sort of office. It is the greatest pride of my life, I can say it honestly, that the men of our profession have seen fit, for what reason I do not know, to give to me the honor of at some time presiding over the deliberations of this body, and I want to assure you of my most sincere and deep appreciation of this honor. I think no one can feel the appreciation of such an honor without accepting with great seriousness the responsibility that comes with it. There have been times in our Society when we have come to our meetings with the idea of gathering for ourselves those things that will give us benefit in the days succeeding them. Our Society has met in a three-days' session, with 360 days following in which we have almost forgotten its existence. But today, due to the vision which has been caught by our former President, Dr. Donald Macrae and which is now being written into reality by that wonderful idealistic and yet practical-minded man, Dr. Frank Sampson, this Society is beginning to be a real dynamic force in Iowa. It is going to be in session 365 days in the year. It is going to be a power, useful not only to ourselves, but it is going to be a power, which it should be, in giving service to the great beloved state of Iowa in the protection of its people—ofttimes contrary to their will—against those things which work detriment to public health and service.

I can only say, I thank you, gentlemen—I thank you from the bottom of my heart. And when it

comes to the year in which I shall have the honor and privilege of presiding over this Society, I assure you that I will endeavor to give it all the service possible for me to render.

Upon motion, the meeting adjourned.

Tom B. Throckmorton,
Secretary.

Transactions House of Delegates Iowa State Medical Society

Seventy-Second Annual Session, May 9, 10, 11, 1923,
Ottumwa

First Meeting, Wednesday, May 9

The House of Delegates met in the Ball Room, Hotel Ottumwa, and was called to order by the President, Dr. C. J. Saunders, at 4:05 p. m. Roll call showed the presence of fifteen officers and forty-seven delegates, a total of sixty-two.

Dr. W. B. Small raised the point of order on the question of seating the delegates from Dallas-Guthrie, Mills and Pocahontas counties. Following a discussion on the constitutionality of the seating of the delegates, the constitution and by-laws were sustained, and the delegates, whose seating was questioned, were requested to secure their credentials for presentation.

A quorum being present, the House then proceeded to the transaction of business.

REPORTS OF OFFICERS

The Secretary, Dr. Tom B. Throckmorton, presented his report and moved that it be accepted and referred to the Finance Committee.

Upon motion duly seconded and carried, the report of the Secretary was accepted and referred to the Finance Committee.

REPORT OF SECRETARY

To the Members of the House of Delegates of the
Iowa State Medical Society:

The following report for the year 1922-23 is respectfully submitted:

During the past year little if any change has been made in the routine work of the Secretary's office. The various officers and standing committees have cheerfully given of their time and attention to such matters as requested by this office, while the Secretaries of the Component County Medical Societies have responded in a very gratifying manner to the usual requests made concerning matters of importance arising between various county medical societies and the state organization. It has long been well understood that a state medical society is no stronger than the ranks from which it recruits its membership, and to this end each county society has been on the alert to bring into membership every eligible physician.

Membership

As a result of this alertness, the membership of the Society has continuously increased. While no doubt there are still physicians who should be in the ranks of organized medicine, yet certain limitations concerning eligibility and qualification for membership in a county society have been rightfully included in the by-laws of our Society. To be eligible to join a county medical society means that a physician must agree to practice non-sectarian medicine; his qualifications for membership depend absolutely on what the members of a county society choose to do. These two factors, eligibility and qualification, form the outer guard to the portal of entrance of organized medicine in this state and as such play an important role in the upkeep of membership in our State Society. Too much credit, therefore, cannot be given the censors who scrutinize carefully and report on applications for membership in a county society and to those who act upon these reports in a conscientious manner.

In 1919, there was a total of 2,205 members; in 1920, 2,340; in 1921, 2,373 members, and the past year, 2,364 members. Up to date this year 2,100 have paid.

American Medical Association

As has been the custom during the past few years, the American Medical Association called a Conference of the Secretaries of the various state societies at the home office last November. A two days' session was held during which the many problems confronting various state organizations were presented and discussed. It may not be out of place to state that the pre-arranged program called for the presentation of the "Iowa Plan" by Dr. Frank E. Sampson and your Secretary. That the report was well received needs, I feel, no special comment, for those who have heard the field director know that there is nothing to be added, save possibly constructive criticism, when Dr. Sampson has had the opportunity of telling of the Field Activities work in Iowa.

While much credit was given the state for its work in organized medicine, and it is not egotistical to state that Iowa ranks well towards the front, still some helpful criticism arose concerning the apparent lethargy of its Council. Your Secretary was not able to refute the argument that our Council, from all external appearance, at least, was inactive. It was shown at the Conference that in those states in which the Council was active and functioning the best work was being accomplished in all departments of organized medicine in such states.

Your Secretary would not have this body believe that he is non-appreciative of the work which our Council has done. Far be it from him to leave such a thought in your minds; but taking just pride in what Iowa medicine has accomplished, he is extremely desirous of seeing this Society not only maintain the high position in the rank and file of the various state associations which it now holds, but, if possible to see the Iowa State Medical Society

forge onward and upward until it has attained the highest position possible in organized medicine in this country. The fruition of such an achievement can only be accomplished through the untiring and increasing efforts of those to whom are entrusted the welfare and guidance of the policies of our State Society.

In closing, your Secretary wishes to thank each and every one who has helped to make the work of the past year what it was, and bespeaks the continued support of the Secretaries of the Component County Medical Societies in the work of the ensuing year.

Other matters in which the office of the Secretary has been active, are reported to the House of Delegates from other sources.

FINANCIAL STATEMENT
May 1, 1922 to April 30, 1923

Receipts

Dues, 1921.....	\$ 15.00	
Dues, 1922.....	1,403.00	
Dues, 1923.....	10,211.00	
Advertising	6,941.71	
Reprints	751.45	
Subscriptions—non-members	83.45	
Sales	22.20	
Honorarium—A. M. A. Advertising Bureau	221.35	\$19,649.16

Disbursements

Commission and Discount to Advertising Bureau	\$ 865.93	
Dr. Thos. F. Duhigg, Treasurer.....	2,488.15	
Dr. A. C. Page, Treasurer.....	16,295.08	\$19,649.16

The following orders have been issued during the year:

No.	Amount
1228 Central Engraving Co., cuts for Journal, June.....	\$ 2.70
1229 Dr. Tom B. Throckmorton, Sec'y, salary office assistant, April	120.00
1230 Dr. Thos. F. Duhigg, Treas., salary, postage, expense, 1921-22	161.65
1231 Plumb Jewelry Co., engraving gavel.....	4.50
1232 Iowa Press Clipping Bureau, news service, March and April	10.00
1233 Koch Bros., record books, Secretary's office.....	13.00
1234 Livingston & Eicher, Attys., Washington, medico-legal fees	100.00
1235 Molyneux, Maher, Meloy, Attys., Cherokee, medico-legal fees	37.50
1236 L. J. Camp, Atty., Creston, medico-legal fees.....	50.00
1237 Dutcher & Hambrecht, Attys., Iowa City, medico-legal Jan., Feb. and March.....	1,193.42
1238 Dr. Lewis Schooler, Des Moines, expense member medico-legal com.	25.00
1239 Dr. J. W. Cokenower, Des Moines, Chairman Trustees, expense	20.00
1240 Dr. F. F. Agnew, Independence, expense, Eye, Ear, Nose and Throat Section.....	11.95
1241 Dr. Tom B. Throckmorton, Secretary, rent, phone, postage, salary 2-15 to 5-15.....	202.09
1242 Mr. and Mrs. F. C. Sparks, Des Moines, registration and assistant to Secretary, annual session	50.00
1243 Dr. C. C. Gibson, Lewis, Iowa, refund.....	5.00
1244 Dr. Edw. P. Davis, Philadelphia, expense attending annual session.....	200.00
1245 Dr. Henry A. Christian, Boston, expense attending annual session.....	155.36

No.	Amount
1246 J. H. Welch Prtg. Co., April Journal, reprints, programs	713.60
1247 Dr. A. M. Pond, Dubuque, expense as President	69.68
1248 Dr. Tom B. Throckmorton, Sec'y, salary, office assistant, May	120.00
1249 Miller Hotel Co., exp. guest at Annual Session	22.48
1250 Dr. T. B. Throckmorton, Sec'y, salary asst., June	120.00
1251 J. H. Welch Prtg. Co., May Jour. and reprints.....	474.60
1252 Dr. D. S. Fairchild, Editor, salary April to July, Secretary's salary, postage.....	410.00
1253 Iowa Press Clipping Bureau, news service, May	5.00
1254 Central Engraving Co., cuts for Journal, July and August	72.90
1255 Central Engraving Co., cut for medical history (Warden)	3.55
1256 Dr. Tom B. Throckmorton, Sec'y, salary office assistant, July	120.00
1257 J. H. Welch Prtg. Co., June Jour. and reprints	491.90
1258 Federal Prtg. Co., stationery for President.....	9.85
1259 Press Clipping Bureau, news service June, July, August	15.00
1260 C. L. Dahlberg Co., form letters.....	2.72
1261 S. D. Page Co., binding 2 Vols., 1921 issue.....	5.50
1262 J. H. Welch Prtg. Co., July Jour. and reprints....	644.05
1263 Upham Bros., bonds for Treasurer and Secretary	112.50
1264 Dr. Tom B. Throckmorton, Sec'y, salary office assistant, August	120.00
1265 Ida J. Brinton, reporting House of Delegates, Annual Session	25.00
1266 Jessie M. Young, Independence, reporting Eye Section and expenses	44.00
1267 Dr. James M. Patton, Omaha, expense attending Annual Session	25.80
1268 Dutcher & Hambrecht, Attys., Iowa City, medico-legal, April, May, June.....	694.13
1269 Dr. Thos. F. Duhigg, Treas., salary May, June, July	37.50
1270 Dr. Tom B. Throckmorton, Sec'y, rent, phone, postage, etc., salary 5-15 to 8-15.....	230.21
1271 Dr. J. W. Cokenower, Chairman, expense trustees' meeting	12.95
1272 Dr. T. E. Powers, Clarinda, expense attending trustees' meeting	11.82
1273 Dr. W. B. Small, Waterloo, expense attending trustees' meeting	7.64
1274 Dr. C. J. Saunders, President, Ft. Dodge, expense attending meeting	6.20
1275 Dr. Paul E. Gardner, New Hampton, expense attending Trustees' meeting.....	14.20
1276 Dr. W. L. Bierring, Chrm. Field Activities Com.	200.00
1277 Miss Adelaide Folsom, Ripon, reporting Annual Session	166.50
1278 Federal Printing Co., stationery, chairman, trustees, councilors, secretary.....	46.07
1279 Dr. Tom B. Throckmorton, Sec'y, salary office assistant, Sept.	120.00
1280 J. H. Welch Prtg. Co., Aug. Jour. and reprints....	510.90
1281 Dr. D. S. Fairchild, Editor, salary July, August and September, salary of Secretary, postage.....	411.50
1282 Central Engraving Co., cuts for December Jour.	7.15
1283 Central Engraving Co., cuts for January Jour.....	9.00
1284 Dr. Tom B. Throckmorton, Secretary salary office assistant, October.....	120.00
1285 J. H. Welch Prtg. Co., September Journal and reprints	446.60
1286 Federal Printing Co., membership receipts and card envelopes	24.40
1287 Bankers Printing Co., reprint order blanks and index cards	7.90
1288 Central Engraving Co., cut for Journal.....	3.38
1289 Iowa Press Clipping Bureau, news service September and October.....	10.00
1290 Dr. E. C. McClure, Bussey, expense to Des Moines to audit Treasurer's books.....	5.10
1291 C. L. Dahlberg Co., form letters.....	2.73

No.		Amount
1292	J. H. Welch Prtg. Co., Oct. Jour. and reprints....	517.45
1293	Dutcher & Hambrecht, Attys., Iowa City, medico-legal, July, August, September.....	879.71
1294	Hammer & Tripp, Attys., Newton, medico-legal fees	133.66
1295	Dr. Tom B. Throckmorton, Sec'y, rent, phone, postage, etc., salary 8-15 to 11-15.....	223.95
1296	Dr. Tom B. Throckmorton, Sec'y, salary office, assistant, November	120.00
1297	Dr. H. C. Eschbach, Albia, expense attending meeting trustees, 11-21-22.....	4.90
1298	Dr. T. E. Powers, Clarinda, expense attending trustees meeting 11-21-22.....	13.74
1299	Dr. W. B. Small, Waterloo, expense attending trustees meeting 11-21-22.....	10.18
1300	Dr. J. W. Cokenower, expense trustees meeting 11-21-22	21.55
1301	Dr. W. L. Bierring, Chrm. Field Activities Com.	3,000.00
1302	J. H. Welch Prtg. Co., Nov. Jour. and reprints....	607.85
1303	Dr. Tom B. Throckmorton, Sec'y, salary assistant, December	120.00
1304	Dr. Tom B. Throckmorton, Sec'y, rent, phone, postage, etc., to 12-31.....	41.53
1305	Dr. D. S. Fairchild, Editor, salary October, November, December, Sec'y salary, postage.....	415.60
1306	American Medical Ass'n, 1923 membership cards	11.50
1307	J. H. Welch Prtg. Co., December Journal.....	490.20
1308	Dr. Tom B. Throckmorton, Sec'y, salary office assistant, January	120.00
1309	C. L. Dahlbert Co., form letters to accompany Constitution and By-laws.....	2.00
1310	Iowa Press Clipping Bureau, news service, Nov., Dec., Jan., Feb.....	20.00
1311	McNamara Office Supply Co., file cabinet and supplies	41.80
1312	Underwood Typewriter Co., Des Moines, repairs on typewriter.....	18.75
1313	Chase & West, Des Moines, office supplies secretary's office	5.52
1314	Federal Prtg. Co., Journal wrappers, circulars, envelopes	112.80
1315	J. H. Welch Prtg. Co., January Journal, reprints, Constitution and By-laws.....	691.00
1316	M. M. White, Atty., Ida Grove, medico-legal fees	131.50
1317	Dutcher & Hambrecht, Attys, Iowa City, medico-legal service, October, November and December....	367.45
1318	Dr. Tom B. Throckmorton, Sec'y, salary office assistant, February	120.00
1319	Dr. Tom B. Throckmorton, Sec'y, rent, phone, postage, etc., salary 11-15 to 2-15.....	242.80
1320	Dr. W. B. Small, Waterloo, expense attending trustees meeting, 2-20-1923.....	10.88
1321	Dr. J. W. Cokenower, Chairman expense trustees meeting 2-20-23	11.85
1322	Miss Caroline Mitchell, Des Moines, work in Secretary's office	35.00
1323	Bankers Prtg. Co., notices to Co. Sec'y and delegates; stationery	14.55
1324	Central Engraving Co., engravings April Journal	74.74
1325	Tom B. Throckmorton, Secretary, office assistant, March	120.00
1326	J. H. Welch Prtg. Co., February Journal.....	490.30
1327	Dr. D. S. Fairchild, Editor, salary Jan., Feb., March, Sec'y salary, postage.....	411.70
1328	J. H. Welch Prtg. Co., March Jour. and reprints	546.55
1329	Bastian Bros., Rochester, N. Y., 1923 badges.....	53.46
1330	Dr. W. L. Bierring, Chrm. Field Activities Com., salary Field Director, Dec., Jan., Feb. and traveling expenses	1,667.60
		\$21,019.15

Tom B. Throckmorton,
Secretary.

JOURNAL STATEMENT
January 1, 1922 to December 31, 1922

Income		
Advertising	\$6,830.95	
Reprints	739.73	
Subscriptions—non-members	93.85	
Sales	11.79	
Honorarium Advertising Bureau A. M. A....	221.35	
Subscriptions 1920 and 1921 members.....	3.00	
Subscriptions 2341 members at \$2.00.....	4,682.00	\$12,585.67
Expense		
Printing—		
3-64 page Journals.....	\$1,302.55	
3-68 page Journals.....	1,386.10	
3-72 page Journals.....	1,477.50	
2-80 page Journals.....	1,153.20	
1-88 page Journal	601.80	\$5,921.15
Journal wrappers	81.75	
Engravings	118.25	
Commission and discount.....	841.03	
Reprints	582.55	
News Service	60.00	
Second class postage and city delivery.....	165.07	
Postage and Cablegram.....	49.92	
Office supplies	31.15	
Office rent and phone.....	145.80	
Editor's secretary	60.00	
Business office assistant's salary.....	720.00	
Editor's salary	1,500.00	\$10,276.67
Gain.....		2,309.00
		\$12,585.67

(Surplus due to the extra dollar allowed per member.)

Tom B. Throckmorton,
Business Manager.

REPORT OF TREASURER

Dr. A. C. Page, Treasurer, presented his report, and moved that it be accepted and referred to the Finance Committee.

Upon motion duly seconded and carried, the report was so referred.

Balance Sheet		
Balance on hand April 30, 1922.....		\$35,102.87
Received from Secretary.....		18,783.23
Trade Acceptance Paper (Morris Plan Bank)		2,000.00
Interest on Investments—		
Liberty Bonds	\$850.00	
Morris Plan Bank.....	407.10	
School Bonds	100.00	
People's Savings Bank.....	243.66	
Sundry interest	24.23	\$ 1,624.99
Total		\$57,511.09
Expended as per orders and checks herewith \$28,569.65		
(Less check No. 743, a transfer from checking to savings account).....		
	5,000.00	\$23,569.65

Assets		
Liberty Bonds (face value \$20,000).....		\$18,600.00
School bonds (face value \$2,000).....		1,909.16
Morris Plan Bank (trade acceptance paper).....		4,340.06

Time Deposits (People's Savings Bank).....	8,011.93	No.	1922		Amount
Checking account (People's Savings Bank).....	*1,080.29	676	6- 1	Dr. A. M. Pond, expenses as President, 1921 and 1922.....	69.68
	\$57,511.09	677	6- 2	Dr. T. B. Throckmorton, salary office assistant, May	120.00
Total Investment—As at April 30, 1922.....	\$35,102.87	678	6-29	Miller Hotel Company, expenses of Dr. E. P. Davis.....	22.48
Total Investment—As at April 30, 1923.....	\$33,941.44	679	7- 1	J. H. Welch Prtg. Co., May Journal and reprints	474.60
Net Loss—During fiscal year ended April 30, 1923, of which \$550.50 is applicable to the year ended April 30, 1922 (outstanding check No. 654).....	\$ 1,161.43	680	7- 1	Dr. T. B. Throckmorton, salary office assistant, June	120.00
		681	7-10	Dr. D. S. Fairchild, salary and stenog., April, May and June, medico-legal, postage Central Engraving, half tone and zinc etching for Dr. Christian and Bendixen.....	410.00
		682	7-10	Iowa Press Clipping Co., May News Service	72.90
		683	7-10	Dr. Tom B. Throckmorton, salary office assistant, July	5.00
		684	8- 9	Central Engraving, half tone for July issue	120.00
		685	8- 9	J. H. Welch Prtg. Co., June Journal and reprints	3.55
		686	8- 9	Federal Prtg. Co., stationery for Dr. Chas. Saunders, President	491.90
		687	9- 1	Iowa Press Clipping Co., June, July and August, News Service.....	9.85
		688	9- 1	C. L. Dahlberg Co., collection letters.....	15.00
		689	9- 1	S. D. Page & Co., binding 2 Journals, 1921	2.72
		690	9- 1	J. H. Welch Prtg. Co., July Journal and reprints	5.50
		691	9- 1	Upham Bros. Co., bonds for secy. and Treas. of Iowa State Med. Society.....	644.05
		692	9- 1	Dr. T. B. Throckmorton, salary office assistant, August	112.50
		693	9- 1	Ida J. Brinton, reporting 1922 Session House of Delegates.....	120.00
		694	9- 1	Jessie W. Young, reporting Eye Section, 1922 Session, expenses.....	25.00
		695	9- 1	Dr. James M. Patten, expenses attending 1922 Session	44.00
		696	9- 1	Dutcher & Hambrecht, medico-legal services, April, May and June.....	25.80
		697	9- 1	Dr. Thos. F. Duhigg, salary as Treas., for June, July and August, 1922.....	694.48
		698	9- 1	Dr. T. B. Throckmorton, salary as Secy., 5-15 to 8-15, rent, postage, expense.....	37.50
		699	9- 1	Dr. J. W. Cokenower, expenses, meeting August 29, Trustees, Officers and Com.....	230.21
		700	9- 1	Dr. T. E. Powers, expenses attending Trustees meeting 3-29-22.....	12.95
		701	9- 1	Dr. W. B. Small, expenses attending Trustees meeting 3-29-22.....	11.82
		702	9- 1	Dr. Chas. J. Saunders, expenses attending Trustees meeting 3-29-22.....	7.64
		703	9- 1	Dr. Paul E. Gardner, expenses attending Trustees meeting 3-29-22.....	6.20
		704	9- 1	Dr. W. L. Bierring, Chrm., Field Activities Committee	14.20
		705	9- 1	Miss Adelaide Folson, reporting 1922 Session	200.00
		706	9-15	Federal Prtg. Co., stationery for Councilors, Trustees and Iowa State Medical Society	Void
		707	10- 3	Dr. T. B. Throckmorton, salary office assistant, September	166.50
		708	10- 3	J. H. Welch Prtg. Co., August Journal and reprints	46.07
		709	10- 3	Dr. D. S. Fairchild, salary July, Aug. and Sept. stenog., salary and postage.....	120.00
		710	10- 3	Central Engraving, zinc etching for Dr. Bevans paper	510.90
		711	10- 7	Central Engraving, discount deducted in error	Void
		712	10-14	Central Engraving, zinc etching for Jour. Dr. T. B. Throckmorton, salary office assistant, October	411.50
		713	11- 2	Central Engraving, zinc etching for Jour. Dr. T. B. Throckmorton, salary office assistant, October	9.44
		714	11- 2	Central Engraving, zinc etching for Jour. Dr. T. B. Throckmorton, salary office assistant, October71
		715	11- 2	Central Engraving, zinc etching for Jour. Dr. T. B. Throckmorton, salary office assistant, October	9.00
		716	11- 2	Central Engraving, zinc etching for Jour. Dr. T. B. Throckmorton, salary office assistant, October	120.00

Des Moines, Iowa, May 3, 1923.

To Whom It May Concern:

This is to certify that Dr. A. C. Page, Treasurer of the Iowa State Medical Society, has left with us for safe keeping securities as follows: \$20,000 Liberty Loan Bonds; Consolidated Independent School District of Meriden, Iowa, School Building Bonds to the amount of \$2,000.00.

There is also to his credit in savings account \$8,011.93, and \$1,225.29 in checking account as at the close of business April 30, 1923.

Yours very truly,

PEOPLE'S SAVINGS BANK,

Carl W. Mesmer,

Asst. Cashier.

Expenditures

Iowa State Medical Society, for the Fiscal Year Ended April 30, 1923

No.	1922		Amount
656	5- 1	Central Engraving Co., zinc etching.....	\$ 2.70
657	5- 1	Dr. T. B. Throckmorton, salary office assistant, April	120.00
658	5-20	Thos. F. Duhigg, salary for 1921 and 1922, stenographer and stamps.....	161.65
659	5-20	Plumb Jewelry Company, engraving gavel	4.50
660	5-20	Iowa Press Clipping Co., March and April News Service	10.00
661	5-20	Koch Bros., special record books.....	13.60
662	5-20	Livingston & Eicher, medico-legal services, E. Noel vs. Wickam.....	100.00
663	5-20	Molyneux Maher & Maloy, attorney fees, Mann vs. Dr. Kas.....	37.50
664	5-20	S. Jay Camp, atty. fees, Miller vs. Coakley	50.00
665	5-20	Dutcher & Hambrecht, medico-legal service, January, February and March, 1922.....	1,193.42
666	5-20	Dr. Lewis Schooler, medico-legal committee, postage and stenographer.....	25.60
667	5-20	Dr. J. W. Cokenower, postage, stationery and stenographer, Jan. to May 10.....	20.00
668	5-20	F. F. Agnew, Chrm. Eye Section, telephone and postage to May 10, 1922.....	11.95
669	5-20	Dr. T. B. Throckmorton, salary 2-15 to 5-15, 1922, rent, postage and phone.....	202.09
670	5-20	Mr. and Mrs. F. Sparks, registration services, May 10, 11, 12, 1922.....	50.00
671	5-20	Dr. C. C. Gibson, refund dues.....	5.00
672	5-20	Dr. E. P. Davis, expenses to Des Moines and return to Philadelphia.....	200.00
673	5-20	Dr. Henry A. Christian, expenses to Des Moines and return to Boston.....	155.36
674	5-20	J. H. Welch Prtg. Co., April Journal and reprints	713.60
675	6- 1	Des Moines Morris Plan Bank.....	2,000.00

*The difference of \$145.00 between the balance of the checking account and the amount stated in the bank certificate represents a deposit made to this account in error during the month of October, 1922. This will be corrected.

No.	1922		Amount
717	11- 3	J. H. Welch Prtg. Co., September Journal and reprints	446.60
718	12- 4	Federal Prtg. Co., printing membership receipts and envelopes.....	24.40
719	12- 4	Bankers Prtg. Co., reprint order blanks.....	7.90
720	12- 4	Central Engraving Co., half tone.....	3.38
721	12- 4	Iowa Press Clipping Co., News Service, September and October.....	10.60
722	12- 4	E. C. McClure, M.D., expenses to Des Moines to audit Treasurer's account.....	5.50
723	12- 4	C. L. Dahlberg, letters to County Secys.....	2.73
724	12- 4	J. H. Welch Prtg. Co., October Journal and reprints	517.45
725	12- 5	Dutcher & Hambrecht, medico-legal services, July, August and September, 1922....	879.71
726	12- 5	Hammer & Tripp, attys., legal services.....	133.66
727	12- 6	T. B. Throckmorton, salary as Secy, August 15 to Nov. 15, 1922, rent, postage and supplies	223.95
728	12- 6	T. B. Throckmorton, salary office assistant, November	120.06
729	12- 6	H. C. Eschbach, expenses to Trustees meeting, November 21, 1922.....	4.90
730	12- 6	Dr. T. E. Powers, expenses to Trustees meeting, November 21, 1922.....	13.74
731	12- 6	Dr. W. B. Small, expenses to Trustees meeting, November 21, 1922.....	10.18
732	12- 6	Dr. J. W. Cokenower, expenses to Trustees meeting, November 21, 1922.....	21.55
733	12- 8	Dr. W. S. Bierring, Chrm., Field Activities Committee	3,000.00
734	12-30	Dr. T. B. Throckmorton, rent, phone and mailing Journals	41.53
735	12-30	Dr. T. B. Throckmorton, salary office assistant, December	120.00
736	12-30	J. H. Welch Prtg. Co., November Journal and reprints	607.85
No.	1923	Amount	
737	1- 2	Dr. D. S. Fairchild, salary for Oct., Nov. and Dec., stenog. and postage.....	415.60
738		Void	
739		Void	
740	2- 6	American Medical Association, 1923 membership cards	11.50
741	2- 6	J. H. Welch Prtg. Co., December Journal and reprints	490.20
742	2- 6	Dr. T. B. Throckmorton, salary office assistant, January	120.00
743		Bank debit to savings account.....	5,000.00
744	2-23	C. L. Dahlberg, letters to county secretaries and officers.....	2.60
745	2-23	Iowa Press Clipping Co., News Service, November, December and January.....	20.00
746	2-23	McNamara Office Supply, steel office file and office supplies, secretary's office.....	41.80
747	2-23	Underwood Typewriter Co., overhauling and repairing typewriter.....	18.75
748	2-23	Chase & West, office supplies for files in secretary's office	5.52
749	2-23	Dr. W. B. Small, expenses at Trustees meeting, 2-20-23	10.88
750	2-23	Dr. J. W. Cokenower, expenses of Trustees meeting, 2-20-23.....	11.85
751	2-23	Dr. T. B. Throckmorton, salary assistant February	120.00
752	2-23	Dr. T. B. Throckmorton, salary as Sec'y, Nov. 15 to Feb. 15, rent, phone and expense	242.80
753	2-23	M. M. White, atty., atty. fees, Joslin vs. Heilman & Houlihan.....	131.50
754	2-23	Federal Prtg. Co., printing Journal wrappers, envelopes and circulars.....	112.80
755	2-23	Dutcher & Hambrecht, medico-legal services, Oct., Nov. and Dec., 1922.....	367.45
756	2-23	J. H. Welch Prtg. Co., Jan. Journal and reprints, December reprints.....	691.00

No.	1923		Amount
757	3-10	Miss Caroline Mitchell, salary in sec'y's office	35.00
758	4- 4	Bankers Prtg. Co., notices and stationery	14.55
759	4- 4	Dr. T. B. Throckmorton, salary office assistant, March	120.00
760	4- 4	Central Engraving Co., half tones and etchings, April Journal.....	74.74
761	4- 9	Dr. D. S. Fairchild, salary as Editor, postage and expenses.....	411.70
762	4- 9	J. H. Welch Prtg. Co., Feb. Journal and reprints	490.30
763	4-17	Bastian Bros., badges 1923 Session.....	53.46
764	4-18	J. H. Welch Prtg. Co., March Journal and reprints	546.55
765		Void	
766	4-24	Dr. W. S. Bierring, chrm., salary Field Dir., Dr. Sampson, Jan., Feb. and March, and traveling expenses.....	1,667.60
TOTAL CHECKS ISSUED During Fiscal Year Ended April 30, 1923.....			\$28,019.15
654	4-30	J. H. Welch Prtg. Co., (not included in report of April 30, 1922).....	\$ 550.50
TOTAL			\$28,569.65

Addison C. Page,
Treasurer.

REPORT OF BOARD OF TRUSTEES

The report of the Trustees, was read by the chairman, Dr. J. W. Cokenower. It was moved and duly seconded that the report be accepted. Motion carried.

The report follows:

The reports of the Secretary and Treasurer show our Society's finances still in good condition, and we see no reason why this condition should not continue.

Comparing the past two years: Our income for the year ending May 1, 1922, was \$20,289.00, expenses \$19,871.00, making a gain of \$418.00, this marked reduction from preceding years, was largely due to the increase in size and printing of our Journal.

Our income for the year ending May 1, 1923, was \$20,408.00 and expenses \$21,019.00, making a loss of \$611.00, which deficit is due to the \$4,867.60 paid the Field Activities Committee.

The amount paid for defending malpractice suits during the past year has been a little less than the preceding year, although the number of cases are about the same.

Your Board of Trustees has held four quarterly meetings with full attendance and commend the Business Management and Editor for the success the Journal has obtained, which is not excelled by any other State Society Journal, in spreading an educational propaganda over the State, thus making it a welcome monthly visitor.

J. W. Cokenower, Chairman,
W. B. Small,
T. E. Powers.

REPORT OF MEDICO-LEGAL COMMITTEE

Dr. D. S. Fairchild, Chairman, presented the report of the Medico-Legal Committee, which, upon motion by the Secretary, duly seconded and carried, was accepted.

The report follows:

The number of cases reported to the Committee from April 1, 1922 to April 1, 1923, thirty-one, representing a variety of claims, medical and surgical. In only twenty-five of these cases were definite claims laid, six cases were apparently for the purpose of escaping payment of bills, without especially stating the nature of the complaint.

During the past year, nine cases have been referred to the Committee in which errors in diagnosis had been complained of. In most of these cases there was also a complaint of excessive charges. It appeared also that the complaint was, delayed time of recovery, and in two cases, was responsible for the patient's death.

Among the claims made were: One puerperal infection, one radium burn, one x-ray burn, one injury from electrical treatment, one burn from hot water bag and retained vaginal pack; five fractures.

Something more than one-half these cases were against physicians in country practice.

The cases during the past year have been reported promptly as a general rule. There is, however, some delay in some cases, due to the fact that important papers in the case have been sent direct to Mr. Dutcher and not to the Committee. This would be proper enough if duplicate copies were sent to the Committee, as Mr. Dutcher is not authorized to act except under the direction of the Committee. The standing of the defendant in the State Society must be determined, as to whether or not he has paid his dues and whether or not the case comes under the head of malpractice and not a collection of a debt, and the employment of a LOCAL ATTORNEY must be AUTHORIZED by the COMMITTEE.

We will report one important case.

Walker vs. Chase

The case of Walker vs. Chase is interesting in the fact that while there was no precedent to establish the question of liability, there was established by the decision of the Supreme Court of Iowa, a principle, which, if the ruling of the lower court had been adhered to, would tend to make the practice of medicine so hazardous that few could afford to engage in it.

The evidence disclosed that the defendant was called to attend a patient twenty-two years of age, who was attended by the mother of a child seventeen months old. On the following morning the child was discovered in a chair at the table after she had eaten all the tablets but four. These tablets contained 1/60 gr. strichnia each, and it is said that there were 12 or 15 in all. The child was seized with convulsions and died in an hour. It appears that the

tablets were pink, placed in a china cup on the table in reach of the child. It was contended that the color of the tablets rendered them more attractive to the child and increased the hazard, and hence a greater precaution.

The Supreme Court held, if, instead of setting the cup on the table, the defendant had placed it in the hand of the child's mother or of the other attendant, this circumstance would have wholly undermined the argument on the proposition that it was negligent for the defendant to put the tablets in a cup and to leave the cup on the table, and that his responsibility for this act continued as long as the tablets remained where he left them. In legal effect, the cup with its contents was put into the custody and control of the child's mother as effectively as by any other conceivable method. It was at her hand and in her care. In order to carry out the instructions of the defendant to give the contents to the patient in doses of one tablet every four hours, she must necessarily handle the cup and assume control of it. It was not wrong for the trial court peremptorily to instruct the jury that the act of the defendant amount to a delivery of the tablets to the child's mother. The care, custody and control of the cup with its contents passed that evening to her, and from that time forward, she, and not the defendant, was responsible for whatever method of care, custody and control she chose to adopt.

Nor was the defendant negligent in that he failed to warn the mother that the tablets, if taken by her child, would be injurious and dangerous. A formal warning to the mother would have been a mere formality, which would have added nothing to the knowledge she already had that it would be extremely dangerous for a child of the age of the one in question to swallow ten or a dozen doses of medicine. Though the petition charged a failure to label the tablets, it was not contended that the failure to do so was a violation of the statute. It was urged as a circumstance on the question of negligence. But an instruction was technically erroneous which implied that the burden of proof was on the defendant to show that the mother knew that the tablets contained drugs that were dangerous to the health and life of her child. On this question the burden was on the plaintiff, not on the defendant.

The conclusion of the Supreme Court is that the record discloses no evidence of negligence on the part of the defendant, and that his motion for a directed verdict ought to have been sustained.

Attorney Fees for 1922-1923

From Apr. 1, 1922 to Apr. 1, 1923, Dutcher & Hambrecht \$2,500.66	
Local Attorneys—	
H. M. White, Ida Grove, in case Joslin vs. Heilman & Houlihan	131.50
Hammer & Trip, Newton; Walker vs. Chase, Norlin vs. Taylor, Norlin vs. Smith.....	133.60
Batschelet & Vincent, Guthrie Center.....	129.45
Total	\$2,895.21

Malpractice Cases Commenced Since Date of Last Report and Since Disposed of

Case No. 1. This action was begun for the December term 1922, of the Mahaska County District Court, claiming damages in the sum of \$25,000 on account of x-ray burns and treatment. The case never came to trial and was finally dismissed, and as the statute of limitations has run the case is finally disposed of.

Case No. 2. This action was begun in the Woodbury County District Court for \$10,000 damages for alleged radium burn. The case was really barred by the statute of limitations and was taken care of by the representatives of the Medical Protective Company. The case was set for trial when the General Assembly was in session and I was not able to be there. The trial of the case, however, resulted in an instructed verdict for the defendant. No appeal was taken and the case is finally disposed of.

Case No. 3. Dr. brought suit against the defendant in Webster County for his bill for services for treating the defendant for an abscess of the lungs. The amount of his bill was \$196.00. The defendant counter-claimed for \$2,500.00 damages alleging malpractice in the diagnosis and treatment. The case was assigned for trial and was finally settled by the dismissal of the counter-claim and by the payment of \$100.00 in full of the doctor's bill, the Doctor having made a reduction of \$96.00 to effect the settlement.

Case No. 4. Dr. brought an action in the municipal court of the City of Des Moines for \$319.00 for services in the treatment of the bladder and kidney of the defendant The defendant filed a counter-claim for \$1,000 for alleged negligence in treatment. The matter was adjudged by the dismissal of the counter-claim and by payment of \$112.50 by the defendants to the plaintiff in full of the plaintiff's bill. The matter is finally disposed of.

Case No. 5. This action was commenced for the May term, 1922, of the District Court of Guthrie County by Dr. for \$87.00 for services rendered to the defendant in an obstetric case. The defendant filed a counter-claim of \$1,000.00 alleging that Dr. willfully and wrongfully threw the body of the defendant's dead child into a slop jar. As a matter of fact, the child was born dead, and the Doctor had a difficult fight to save the life of the mother, and the dead child's body was dropped into the receptacle accidentally. The case was assigned for trial two or three times and demurrers were filed, but the court finally held that if the allegations of the petition were true the plaintiff was liable. The case was settled for a nominal sum and is finally disposed of. The settlement was effected by the plaintiff throwing off \$8.00 from his bill for services.

Case No. 6. This action was begun for the September term, 1922, of the District Court of Hardin County, claiming damages in the sum of \$5,000. The notice was served and stated that the petition would be on file on or before August 24, 1922. The petition

was never filed, and the litigation seems to be abandoned. The statute of limitations has not run, but I feel confident that the case will not be started again.

Malpractice Cases Pending at Date of Last Report and Since Disposed of

Case No. 1. This case had been tried prior to our last report and at the time of the last report a motion for new trial was pending. The plaintiff recovered a judgment for \$300.00 and under all the circumstances we advised the payment of the judgment, which was done, and the case is finally disposed of.

Case No. 2. This case involved a claim for damages on account of negligence in leaving 1/60 grain strychnine tablets within the reach of a child which resulted in the child's death. The case was tried about two years ago and a verdict returned in favor of the plaintiff for \$3,500. We appealed the case to the Supreme Court, and the Supreme Court sustained our contention that there was not sufficient evidence to justify its submission to a jury. The cause was reversed and we will have no further trial of it. The case is reported in 190 Northwestern Reporter, page 397.

Case No. 3. This was an action for \$15,000.00 damages for negligence in failing to reduce a dislocation of the elbow and to discover and treat a fracture of the ulna. The case was tried last week at Fairfield and a verdict for the defendant was rendered by the jury. The time has not expired within which to file a motion for a new trial, but I do not believe a motion will be filed and am therefore, reporting the case as finally disposed of.

Case No. 4. This action was brought for the August term, 1921, of the Webster County District Court for damages alleged to have been suffered on account of the negligent use of an x-ray. The case was a very dangerous one, and after having been assigned for trial several times and continued, it was finally dismissed by the plaintiff, and as the statute of limitations has run it is finally disposed of.

Case No. 5. This action was brought for the January term, 1922, of the Scott County District Court for \$15,000.00 damages alleged negligence in the diagnosis and treatment of a compound fracture of the right femur. The result was an exceedingly bad one, and last September it came on for trial in Davenport, and after three or four days of trial, we settled the case by the Medical Protective Company of Ft. Wayne paying the plaintiff \$1,350.00. The settlement was an exceptionally good one under all the circumstances.

D. S. Fairchild, Sr.,
Chairman.

Condensed Report of Cases Against Members of the Iowa State Medical Society, 1922-1923

To Dr. D. S. Fairchild, Dr. H. B. Jennings, and Dr. Lewis Schooler, Medical Defense Committee:

We have submitted full report upon all cases pending at the date of our last report and also of cases commenced since that date. The following is a

summary of certain particulars in all cases commenced since the establishment of the Medical Defense Committee of the Society.

Cases commenced since organization of department.....	212
Cases commenced prior to the report of 1909.....	15
Cases commenced during 1909-1910.....	13
Cases commenced during 1910-1911.....	10
Cases commenced during 1911-1912.....	14
Cases commenced during 1912-1913.....	13
Cases commenced during 1913-1914.....	10
Cases commenced during 1914-1915.....	24
Cases commenced during 1915-1916.....	19
Cases commenced during 1916-1917.....	17
Cases commenced during 1917-1918.....	13
Cases commenced during 1918-1919.....	14
Cases commenced during 1919-1920.....	7
Cases commenced during 1920-1921.....	12
Cases commenced during 1921-1922.....	13
Cases commenced during 1922-1923.....	18
Cases pending at date of 1909 report.....	7
Cases pending at date of 1910 report.....	10
Cases pending at date of 1911 report.....	14
Cases pending at date of 1912 report.....	25
Cases pending at date of 1913 report.....	26
Cases pending at date of 1914 report.....	21
Cases pending at date of 1915 report.....	28
Cases pending at date of 1916 report.....	33
Cases pending at date of 1917 report.....	33
Cases pending at date of 1918 report.....	29
Cases pending at date of 1919 report.....	29
Cases pending at date of 1920 report.....	26
Cases pending at date of 1921 report.....	30
Cases pending at date of 1922 report.....	26
Cases now pending.....	33
Total cases disposed of.....	184

Nature of Cases

Malpractice in removing seed wart.....	1
Malpractice in not discovering and uniting severed ligaments of the wrist.....	1
Alleged assault.....	2
Removal of cancer of the hand.....	1
Conspiracy to have plaintiff declared insane.....	2
Fracture of the arm.....	30
Fracture of leg or femur.....	52
Appendicitis—sponge case.....	2
Caesarian operation—sponge case.....	1
Cancer of breast—sponge case.....	1
Womb operation—sponge case.....	1
Operation for kidney—sponge case.....	1
Appendicitis, malpractice in operation.....	5
Appendicitis—exploratory opening.....	1
Childbirth, alleged failure to attend after alleged agreement to do so; child died (separate actions by father and mother).....	2
Libel for testifying patient was insane.....	1
Hand crushed, alleged improper treatment.....	1
Failure to discover sub-caracoid dislocation of shoulder joint.....	1
Hand lacerated, alleged improper treatment.....	1
Ear, alleged improper treatment.....	2
Eye, alleged improper treatment.....	1
Infection, childbirth.....	2
Medical treatment of child.....	1
Abortion, improper after-treatment.....	3
Abortion, without justification.....	2
Improper treatment of nail puncture in foot.....	1
Alleged removal of wrong kidney.....	1
Stomach trouble, alleged improper treatment and failure to treat.....	1
Anesthetic, death under.....	1
Improper diagnosis of diphtheria.....	1
Improper diagnosis of broken ribs.....	1
Removal of uterus, alleged negligent incision of the bladder.....	1

X-ray burn.....	7
Infection following amputation.....	1
Alleged improper treatment of scald.....	1
Removal of adenoids.....	2
Alleged improper abdominal incision.....	3
Failure to administer serum, patient died of lockjaw.....	1
Fracture of collar bone.....	3
Willful insertion of instrument, producing abortion.....	1
Operation for pregnancy of fallopian tube.....	1
Negligence in administration of poison, causing death.....	1
Improper treatment of wound in leg from kick of horse.....	1
Alleged negligence in communicating erysipelas to woman in childbirth.....	1
Negligence in suffering patient mentally delinquent to jump out of unguarded window in private sanitorium.....	1
Negligent amputation of finger.....	3
Negligence in attending and severing cords of hand.....	1
Wrongfully administering morphine.....	1
Communicating small-pox to patient in hospital.....	1
Fracture of lower jaw.....	1
Dislocation of knee.....	1
Cancer of stomach.....	1
Draining pelvic abscess.....	1
Operation for tonsils without consent.....	2
Negligent incision into intestine—ovarian tumor.....	1
Negligent diagnosis and treatment of pus in abdomen.....	1
Negligence in removing button from child's throat.....	1
Hot water bottle burn.....	2
Failure to discover fractured vertebrae.....	1
Improper treatment of vaginal infection.....	2
Improper treatment of inflammatory rheumatism.....	2
Negligent removal of tonsils.....	4
Negligent treatment of gunshot wound.....	1
Negligent treatment of abscess of bladder.....	2
Negligent treatment of abscess under arm.....	1
Wrong diagnosis of sprain of ankle.....	1
Failure to properly tie umbilical cord.....	1
Failure to discover fracture of ilium.....	1
Exposing patient to scarlet fever by wrong diagnosis.....	1
Improper treatment of insect bites.....	1
Negligent treatment of fractured finger.....	2
Improper treatment of fractured foot.....	1
Paralysis of facial nerves in mastoid operation.....	1
Failure to diagnose abscess of kidney.....	1
Malpractice, childbirth.....	1
Malpractice, diagnosing and treating typhoid fever.....	1
Malpractice, kidney irrigations.....	1
Malpractice, infection, following injection for piles.....	1
Malpractice, child-birth, born dead.....	1
Malpractice, infection following operation for hernia resulting in death.....	1
Malpractice, alleged arsenic poisoning from medicine prescribed.....	1
Malpractice, electrical treatment for shingles.....	1
Malpractice, treatment pulmonary abscess.....	1
Malpractice, fracture of foot.....	1
Improper treatment of ligaments of wrist.....	1
Negligence in tying patient in bed, resulting in gangrene and amputation of leg.....	1
Exploratory opening for diagnostic purposes, negligence in exposing person, resulting in death of child.....	1
Negligent burn by radium.....	2

Total amount of damages claimed in all cases to date.....	\$2,261,669.00
Judgments recovered against members.....	3
Aggregate amount of judgments.....	\$ 15,475.00
Consultations on cases threatened in which no proceedings were had.....	110

Respectfully submitted,

Dutcher & McClain.

Iowa City, Iowa, May 5, 1923.

REPORT OF COMMITTEE ON CONSTITUTION AND BY-LAWS

Report of the Committee on Constitution and By-Laws was made by the Chairman, Dr. V. L. Treynor, as follows:

The Committee has no changes to recommend to the constitution and by-laws, but would call your attention to the new edition of the constitution and by-laws that has been printed and distributed since the last session, the credit for the work being due to the Secretary of the Society.

No report from the Council.

REPORT OF MEDICAL LIBRARY COMMITTEE

The report of the Medical Library Committee prepared by Miss Frances V. van Zandt, Librarian Medical Department Iowa State Library, was presented by the Chairman, Dr. D. S. Fairchild, which, upon motion duly seconded and carried, was accepted.

The report follows:

In the Medical Department of the State Library, the volumes now number 5,822 and the periodicals currently received 100. A number of the journals come to the library through the courtesy of the Iowa State Medical Society. It is purposed to send from time to time lists of our newest accessions to the physicians of the state as has been done recently.

The present librarian entered upon her duties May 1, 1922, and offers the following statistics as showing the progress of the work to, and including, March 31, 1923.

	June, 1922	March, 1923	Period from June, 1922 to Mar., 1923
Bibliographies prepared	0	12	40
Requests from out of town.....	3	45	181
Books and Periodicals loaned out of town	23	222	756
Visitors	71	82	828
Books and Periodicals loaned in Des Moines	68	136	1156
Entire number of books and Periodicals loaned.....			1912

Frances B. van Zandt,
Medical Librarian.

REPORT OF PUBLICATION COMMITTEE

The report of the Publication Committee was presented by the Chairman, and Editor, Dr. D. S. Fairchild, which, upon motion duly seconded and carried, was accepted.

The report follows:

During the year 1922 we have kept the Journal at 43 pages reading matter as a matter of economy. We have also practiced the closest economy to maintain a safe balance in the treasury (our work on the medico-legal committee has been entirely gratuitous, only actual postage has been paid by the Society). The dues have been kept at \$5.00 and this has paid all the ordinary expenses of the State Society, the

protection against damages for malpractice and the expenses of the Journal and maintained an accumulating balance of about \$1,000.00 a year. It had been our hope that the time would soon come when we should have a balance which would meet every exigency for which the fund was created. We had had experience with short funds and the Board of Trustees had by careful watchfulness, established a balance between income and expenditure, and we could feel a sense of financial security in our State Society, a matter that had seriously troubled some of the other state societies.

Last year, it will be recalled, a new department was added to the State Society without providing funds for it, and at once appropriated \$7,500.00 from a fund that had been accumulated for another purpose.

We feel that this is a dangerous precedent and will lead to bankruptcy as surely as in private business.

Without for one moment questioning the value of the activity set on foot by the House of Delegates in 1922, we feel that a definite provision should have been made for financing the new undertaking. While it is true that \$7,500.00 will not be fatal to the accumulations of the last twelve years, it cannot be repeated.

We are fully in sympathy with every activity that promises to advance the interest of the practice of medicine, yet we cannot escape the belief that there may be error in this direction which may be avoided if the cost is considered. I believe that the contributions made by the State Medical Society to the Field Activities started last year, should appear in the form of a budget and should be added to the annual dues of the State Society.

I have mentioned the fact that the \$5.00 dues were adjusted after several years of experience and study to the ordinary needs of the State Medical Society and is not too much to finance the activities already in operation prior to 1922.

I am in favor, without question, of appropriating all the moneys the majority of the House of Delegates believe should be appropriated, and I am perfectly willing to have my dues increased to meet the expense. The State Medical Societies over the country are adopting new activities for the good of the profession, not always in agreement with each other or in the light of true wisdom, but the American Medical Association is endeavoring to correlate these medical activities on a sound basis, under the advice of men of large experience and who have devoted many years to the study of economic problems. It would be safe to co-operate with such men in the general plan of operation, and if there are certain conditions in one state that require special activities, then the provision should be made and properly financed.

D. S. Fairchild, Sr.,
Chairman.

The report of the Field Activities Committee was deferred until the Thursday morning meeting.

Announcement was made by the Chair that the delegates from the various congressional districts would assemble and select a member from their respective districts to act on the Nominating Committee.

Upon motion the meeting adjourned at 6:00 p. m.

The delegates from the various congressional districts assembled to select a member from their respective districts to act upon the Nominating Committee.

The committee reported was:

First District—C. A. Boice, Washington.

Second District—C. F. Watts, Williamsburg.

Third District—L. C. Kern, Waverly.

Fourth District—C. E. Dakin, Mason City.

Fifth District—A. W. Erskine, Cedar Rapids.

Sixth District—Clara L. Cronk, Bloomfield.

Seventh District—E. C. McClure, Bussey.

Eighth District—A. E. King, Blockton.

Ninth District—R. L. Barnett, Atlantic.

Tenth District—J. W. Kime, Fort Dodge.

Eleventh District—E. E. Munger, Spencer.

C. A. Boice, Chairman.

E. C. McClure, Secretary.

Second Meeting, Thursday, May 10, 1923

The House of Delegates met in the Ball Room, Hotel Ottumwa, and was called to order by President Saunders at 8:15 a. m.

Roll call showed the presence of fifteen officers and forty-one delegates, total of fifty-six.

No report from the Council.

REPORT OF PUBLIC POLICY AND LEGISLATIVE COMMITTEE

The report of the Public Policy and Legislative Committee, in the absence of the Chairman, Dr. W. W. Pearson, was read by Dr. B. L. Eiker, member of the Committee. Dr. Eiker supplemented the report by a statement as to the work done by the members of the committee in conjunction with the Field Activities Committee.

It was moved and seconded that the report be accepted. Motion carried.

The report follows:

This report will consider the legislative work of the Iowa State Medical Society under four heads—Policies, Plan of Operation, Results, and Recommendations.

Policies

The Committee confined its advocacy to public health measures.

In this it cooperated with the State Board of Health, the Iowa Tuberculosis Association, the Board of Control of State Institutions, the Commission on Animal Health, the Superintendent of Public Instruction, and the State Board of Education.

It also cooperated at times with national agencies; for instance, on the Physical Education Bill it was allied with the National Physical Education Service, National Playground Recreation Association, National Tuberculosis Association and the State Teachers' Association.

The bill as passed in its final form, was written by its representative.

It participated as a matter of cooperation in the legislative council under the auspices of the State Conference of Social Work, which council includes representatives of thirty state-wide agencies.

Plan of Operation

The Legislative Committee held joint sessions with the Field Activities Committee and the Councilors of the State Society, in order to orientate its attitudes.

It was represented at the state house and elsewhere on legislative matters, by the Executive Secretary of the Iowa Tuberculosis Association.

The method of work was largely one of personal contact in an unobtrusive and inoffensive manner. Few letters and telegrams were sent, but such communications as did go to county associations, were issued at what were deemed to be critical moments.

It gave formal endorsement to few measures but was concerned in the success of many and in the failure of objectionable proposals through its personal representative.

The physicians at Des Moines did practically no direct lobbying, but considerable lobbying was done, especially during the recesses, by local physicians and agencies whose efforts were set in motion by communications from headquarters. In a number of instances representatives of county medical societies personally or in committee groups waited on their representatives while they were at home during the spring recess.

The committee members and other Des Moines physicians acquired a personal acquaintance early in the session by entertaining individual members of the legislature. A significant occasion was the dinner at the Des Moines Club given to the members of the public health committees of both the House and Senate, and to the Chairmen of other important committees, such as Appropriations. A number of physicians spoke informally, making it plain that there was no concealed purpose in the dinner and no bills were being lobbied for at that time. They declared the attitude of the State Medical Society to be that of an impersonal and unselfish interest in public health and community welfare. They offered to the legislators whatever technical information and assistance might be desired.

However, one of the members of the House who was called on impromptu to respond made a stirring appeal for the Rockefeller Appropriation. This gave a certain trend to the meeting and the other members of the House and Senate who responded fell in line and publicly endorsed it.

Results

Following is a summary of health legislation. It will be seen that out of twenty health bills actively promoted, nineteen were passed. No bills to which the State Society was actively opposed succeeded in getting through, and six objectionable measures were either deferred or postponed.

The cooperation of the physicians in the matter of the physical education bill will go far to secure the good will of the teaching profession of the state. This bill was advocated both by the Superintendent of Public Instruction and the State Teachers' Association. The information on which the votes were based was furnished principally by our personal representative and a large portion of the actual personal contact with members of the legislature was made by him.

The open endorsement of the Sheppard-Towner bill after a thorough investigation avoided the political error made by medical groups in other states and earned the good will of friends of the university and the large membership of women's organizations throughout the state. The circular letter to physicians on this subject explained that this bill was not state medicine in that it did not provide medical or nursing treatment, and it would increase the business of local practicing physicians. The sentiment on this bill changed during the spring recess so that it was possible after the recess to muster a good majority in its favor. Due credit for the passage of this and the Rockefeller Bill should be given to an influential farm publication.

In the personal work on behalf of the Rockefeller appropriation, it was found necessary to explain that one of the underlying causes which first interested the Rockefeller Foundation in Iowa, was the possibility of developing a system of medical education so as to correct the inequitable distribution of medical and hospital service throughout rural districts.

Among the important measures which were buried in committee or deferred to the Special Code Session, were an attack on the Vital Statistics Law which would have caused the immediate exclusion of Iowa from the registration area; a bill giving county supervisors the power to appoint boards of hospital trustees, and code bills relating to hospitals, state board of health and medical practice. In regard to the first of these, it is significant that under the vital statistics law passed two years ago, Iowa was admitted to the birth registration area by the federal census bureau on the first test—an unduplicated achievement. It is hoped by the state board that with the cooperation of physicians Iowa will be admitted next year to the birth registration area also. In fact, it is quite essential that this should be accomplished in order to prevent further attacks upon the vital statistics law which might be successful.

A general summary of results would include a friendly acquaintance with members of the legislature in the process of which no enemies were made, the acquisition of the good will of the other state

wide organizations, state officials and the general public, and a demonstration of the sincerity of the medical profession in its espousal of public health.

Recommendations

The Special Code Session will begin December 4. There is a large group of lengthy code bills, relating both to public health and medical practice. The present excellent county hospital law of Iowa will have to be saved all over again. The proposed reorganization of the Board of Health plan will be very detrimental to the medical profession. The subject of a medical practice act as a substitute for code bill 262 must be carefully considered.

The last subject is vitally important to the medical profession. The Society must be willing to spend time and money if its professional interests are to be safeguarded. In regard to medical practice, the laws of other states must be compared. There must be considerable time spent in the study and preparation of a suitable medical practice act.

There must be conferences after a tentative draft has been made in order to secure unanimity of opinion and support. Both before and during the session much time and effort will have to be devoted to explaining and to convincing individual members of the legislature. Throughout the session legislative processes will have to be carefully watched and encouraged. This will mean not only a continuous personal service but will involve the securing of the backing of powerful extra-legislative groups.

Finally, in order to continue those activities which are keeping alert the county societies and the profession and which are securing the cooperation of other community elements and the good will of the general public, the Field Activities Committee of the State Medical Society must be perpetuated in as near its present form as possible.

Wm. W. Pearson, Chairman,
D. J. Glomset,
B. L. Eiker,

Committee.

Health Bills of the Fortieth General Assembly, Supported by Health Workers

PASSED

- S F 700 Physical education and health training in schools (Com. on schools). (Bill written by Exec. Sec'y I. T. A.)
- S F 453 Rockefeller gift of \$2,250,000 for medical education at State University met by 5-year appropriation \$450,000 (Mead).
- H F 340 Maternity and infant hygiene (Sheppard-Towner) \$21,213.60 (Doolittle).
- S F 528 Playgrounds (Goodwin).
- S F 740 Use unused land for playgrounds (Com. Cities & Towns).
- H F 732 Bovine tuberculosis, permit county area system, 3 mills (An. hush. com.).
- H F 479 Social Hygiene \$25,000 (Com. Pub. Health).
- S F 513 Prohibit "filled milk" (Newberry).
- H F 425 St. Bd. of Health to regulate disinterments (Elliott).
- S F 365 H F 372 & 373, Bd. of Control approp. (Kimberley & Lake).
- S F 613 \$22,800 for vocational rehabilitation (Mantz).
- S F 614 \$10,000 for administration of voc. training (Mantz).

- H F 681 Sanitary material in mattresses (Strippel).
 H F 803 State inspection of elevators (P. Health Com.).
 H F 162 Comfort stations (Code revision).
 H F 366 Mine inspectors post notices of conditions (Griswell).
 H F 678 Medical and nursing care for police and firemen (Hansen).
 S F 304 Additional powers local boards of health, sanitary conditions of alleys, etc. (Tuck).
 H F 629 Use injunction to prevent pollution of waters (Garber).

NOT PASSED

- H F 490 Extra appropriation for bovine tuberculosis (Criswell).

Health Bills Opposed by Health Workers

PASSED—NONE

NOT PASSED

- H F 578 County supervisors to appoint hospital trustees.
 S F 581 Amend vital statistics law with effect of expelling Iowa from national registration area.
 S F 142 Changing county hospital law (Code commission).
 S F 166 Omitting part of support of city hospitals (Code Com.).
 S F 260 Changing St. Bd. of Health law (Code Com.).
 S F 262 Professional examinations, medical practice, etc. (Code Com.).

Miscellaneous Bills Relating to Health Matters

- S F 297 Repealing quarantine of tb. cattle—lost.
 H F 340 Exempting nurses, chiropractors, etc., from jury service—passed.
 H F 395 Requiring wash houses at mines—lost.
 S F 472 and 515 Re-contagious diseases of animals—lost.
 H F 453 Work shop sanitation—lost.
 H F 641 Raise chiropractors qualifications and fees—passed.
 H F 281 Value tb. cattle as assessed—passed.
 S F 594 Creating dept. of agriculture (including animal health, dairy and food, etc., and transferring hotel inspection from Bd. of Health to)—passed.
 H F 766 Prohibit butter substitutes in hospitals and jails—lost.
 S F 698 Eradicate noxious weeds—lost.
 H F 546 Pasteurization or tb. test of dairy products—lost.
 H F 785 Signals at R R crossings—lost.
 H F 344 Practice of podiatry—lost.
 H F 711 Registration of pharmacists—passed.
 S F 511 Commission of pharmacy—passed.
 H F 520 Re-dental examiners—passed.
 S F 569 Regulate sale narcotic drugs; apply "injunction and abatement"—passed.
 S F 355 Re-State Hosp. for Epileptics and Feeble-minded—passed.
 S F 754 "Omnibus bill" (St. Bd. of Health, etc.)—passed.

**REPORT OF FIELD ACTIVITIES
COMMITTEE**

The report of the Field Activities Committee was presented by the Chairman of the Committee, Dr. W. L. Bierring.

Dr. C. A. Boice, moved that action on the report be deferred until Friday morning; seconded and carried.

The report follows:

By action of the House of Delegates at the last annual session, the Committee on Field Activities was made a standing Committee, and its duties to include among other things those formerly delegated to the Committee on Health and Public Instruction.

The Committee held its first formal meeting in Des Moines August 23, 1922, and effected an organization by electing Dr. Walter L. Bierring, Chairman,

Mr. T. J. Edmonds, Secretary, and Dr. F. E. Sampson, Director.

There have been five meetings of the Committee, two of these being joint meetings with the Board of Councilors.

Among the subjects which were considered at these meetings were the inactive county medical society, county public health associations, the full-time county public health officer, the operation of the Sheppard-Towner law in Iowa, the Rockefeller Gift, and other legislative matters; speakers bureau, clinicians bureau, publicity, county hospital movements, distribution of practice in rural counties, etc.

The activities of the Committee may be listed as follows:

Communication to County Societies

Seven circular letters were sent on the following subjects:

1. Introducing Dr. Sampson and stating the objects of the Committee, signed by Dr. Bierring.
2. Relating to cooperation, publicity and Christmas Seal sale.
3. Relating to Code Commissioner's Bills.
4. The Sheppard-Towner plan and its effect upon medical practice.
5. The Rockefeller appropriation for the University Medical School.
6. News letter, miscellaneous subjects.
7. County Public Health Associations.

A questionnaire on the County Hospital situation was also sent.

A questionnaire on local activities was sent to the Councilors.

A corresponding series of letters was sent by the Iowa Tuberculosis Association to its connections recommending cooperation with county medical societies, etc.

The press service included an article concerning the legislative attitude of the State Society and a summary of health legislation syndicated to all the papers in the state. Further facts in regard to publicity will be found later in this report.

In addition to these formal communications there was, of course, a large amount of individual correspondence between the Director and the county medical societies relating principally to local situations.

Contacts of Director

Doctor Sampson addressed one hundred and eighteen meetings in the state, visited fifty counties and addressed or conferred with fifty county societies.

He was called upon for numerous addresses outside of the state on the subject of the Iowa Plan and has a large list of standing invitations as yet unfilled.

He contacted with practically all the state organizations which have any interest in health or legislation. For the past two years he has been President of the Iowa State Conference of Social Work.

Special Studies

The Director made studies, compilations and research on the following subjects: Local hospital situations, distribution of medical service, activities of local societies, and medical practice acts. His statistics and state maps to be presented before the scientific assembly should be considered as a part of this report.

Publicity

The State Medical Society has received more newspaper publicity in the last year than in all its previous history.

The clippings resulting from Dr. Sampson's field visits and speeches total over 150 different articles. Three syndicated news releases relating to the activities of the State Society yielded 425 clippings from all over the state.

Among the specially written articles the most conspicuous and valuable are: a double column article on the first page of the Sunday Register, Des Moines, consisting principally of an interview with Dr. Sampson on work of the Field Activities Committee and the new public spirit of medical profession—an article which proved perfectly legitimate and justly deserved advertising worth hundreds of dollars to the profession; and a recent article in the Associated Press summarizing results of the legislative activities of the Society.

Articles by Dr. Sampson have appeared in nine magazines of national circulation and three by T. J. Edmonds, Secretary, relating to the Field Activities of the State Society.

The entire issue of the Campaign, the official joint publication of the Board of Control of State Institutions and the Iowa Tuberculosis Association, was devoted to the interests of the medical profession. This health magazine has a carefully picked mailing list of 11,500 of the most alert people in the state.

The tone of all this publicity is worthy of note. It has emphasized the broad attitude adopted by the medical profession, its interest in public health, its services to community welfare. It has put the medical profession in a wholesome light in the eyes of thinking people all over the state and nation.

Appropriation

At the last annual session an appropriation up to \$7,500.00 was provided for the use of the Committee.

Report of Receipts and Disbursements

Receipts

Sept. 1, 1922, check from Treas. A. C. Page	\$ 200.00
Dec. 1, 1922, check from Treas. A. C. Page	3,000.00
April 28, 1923, check from Treas. A. C. Page	1,667.60
	<hr/>
	\$4,867.60

Disbursements

September 1, 1922 to March 1, 1923—	
Salary of Director—six months.....	\$2,800.00
Salary Executive Sec'y T. J. Edmonds.....	200.00

Traveling expenses—Director	440.05	
Office expense, fixtures, etc.....	229.82	
Legislation expense	396.55	
Sept. 1, 1922, to special fund of Director.....	200.00	
March 13, 1922, to special fund of Director.....	200.00	
	<hr/>	
	\$4,466.42	\$4,466.42
		<hr/>
Balance on hand.....		\$ 401.18
		<hr/>
		\$4,867.60

With the balance of funds on hand in the account of the Chairman and Director, including also the sum of \$109.50 collected by the Director during the year from Teachers Institutes, Social Service Leagues, etc., it will require an additional disbursement of approximately \$500.00 to pay all expenses of the Committee to May 15, 1923. The Director's salary for March and April being calculated on a basis of two-thirds and one-third for the month of May, 1923. The total expense of the Committee for the past nine months will approximate about \$5,300.00.

Future Plans

In outlining a program of activities for the coming year, the Committee recognizes that the close cooperation built up between the Field Activities Committee, Legislative Committee and the Council, in preparation for and during the session of the Fortieth General Assembly should be continued in preparation for the Special Session called for December 4, 1923, and there should be further accentuation of the already fairly advanced endeavor to build up a system of continuous and well disseminated publicity.

In addition the Committee contemplates the creation of a program service bureau. Among the duties of this bureau will be:

(a) To formulate a series of suggestive outlines for County Medical Societies. Outlines that, while offering reasonable variety will, at the same time, provide systematic continuity, encourage study and accentuate clinics and practical demonstrations rather than the reading of papers on highly technical subjects.

(b) To organize a Clinicians' Bureau, through which County Medical Societies may secure, when desired, clinicians of their choice, or, if such is not possible, secure in their stead the services of some clinician of recognized standing.

(c) To serve as a clearing house or coordinator for the several organizations and institutions that are concerned with putting on clinics of one kind or another and bring their activities into intelligent accord with the activities of the County Medical Societies.

(d) To organize a Speakers' Bureau, through which the growing demand for public addresses and for conferences with interested lay groups may be more adequately met.

The Committee on Hospitals (already in cooperation with A. M. A. Council on Hospitals) to con-

tinue its already well advanced study of the hospital situation in Iowa, to invite the cooperation of representatives of the Iowa Board of the American College of Surgeons and the American Hospital Association in formulating informative matter and recommendations calculated to promote understanding and intelligent procedure in the establishing of new hospitals and efficient standards of service in all hospitals.

Moving Pictures and Slides

Through the cooperation of the Iowa Tuberculosis Association, the State Board of Health, and U. S. P. H. S., the Field Activities Committee is offering a film service of eleven different subjects. One of these is technical in nature, relating to tuberculosis. One is a popular presentation of the relationship of human and bovine tuberculosis. This one has been loaned to over forty farm bureaus. One relates to a group of preventable diseases. Most of the others bring out the importance of periodical physical examination.

Sets of slides on health subjects are also available.

After careful consideration the Committee submits the following budget for the ensuing year:

Traveling expenses	\$ 600.00
Executive services	4,600.00
Stenographic and clerical services.....	1,200.00
Printing, postage, communications and publicity.....	600.00
Rent	300.00
Office supplies and miscellaneous.....	200.00
Total.....	\$7,500.00

Recognizing that the successful initiation of this movement has been due in fullest measure to the enthusiasm and energy so characteristic of the Director, the Committee considers it extremely fortunate that the services of Dr. Sampson have been enlisted for another year; while the duties will be somewhat more supervisory under the new arrangement, the inspiration of his leadership will insure the successful accomplishment of the great work that the State Society has undertaken.

The Committee has considered the expenditure of funds carefully, with due regard of all the circumstances, and feels certain that the work of the Committee cannot be continued for less than the amount submitted in the proposed annual budget; therefore the Committee earnestly recommends that an appropriation of \$7,500.00 be provided for the use of the Field Activities Committee subject to conditions set forth in the By-laws relating to the payment of bills.

In conclusion we beg to emphasize that the work of Field Activities Committee this year furnished a valuable basis for the legislative operations and was an indispensable element in the successful record of legislative results, and we are sure it will be impossible to accomplish any substantial results in future medical legislation without the machinery of the Field Activities Committee and without the contacts with the related state groups both private

and official which it has established as a part of its regular work.

W. L. Bierring, Chairman,
O. J. Fay,
B. L. Eiker,
R. P. Fagan,
N. G. Alcock,
James F. Edwards,
T. J. Edmonds, Sec'y,
F. E. Sampson,
Tom B. Throckmorton,
Committee.

Dr. Bierring then made a supplementary report concerning the financing of the work of the committee for the ensuing year as follows: That funds be provided for the committee in the same manner as was done last year; or that the dues be increased \$2.00 per member at this time; or that a special assessment of \$2.00 per member be made; or that the dues be increased \$3.00 per member at next year's meeting.

Dr. Sampson moved that action on the supplementary report be deferred until the Friday morning meeting. The motion was seconded and carried unanimously.

REPORT OF IOWA DELEGATES TO THE HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION

Dr. J. C. Rockafellow, delegate, presented his report as follows:

In making my report as one of your delegates to the A. M. A., I have in mind the fact that the transactions of the meeting in Saint Louis have been reported in detail in the Journal of the American Medical Association. The magnitude of the business conducted by the national House of Delegates precludes more than a brief report of the transactions. The work of the House of Delegates impresses one as being conducted with thoroughness and dispatch by a body of representative men earnest in their desires. Like all democratic bodies, leaders naturally develop and leadership is not decided by the leader. Prolonged service is here rewarded as elsewhere. The dominating influence in the House is crystalized in a group of men who have served the organization for many years—men of the best type who have learned to know each other personally as well as professionally. As in all political bodies, factions spring up but they usually hark back to local political differences in the leaders' respective states. These local differences should not be allowed to creep into the National Body but they do under guise of amendments, reports, etc.

At present there is an amendment before the House that will reorganize or disorganize the House of Delegates. I refer to the amendment which will eliminate delegates of the various scientific sections from a vote in the House. The objection raised being that these delegates naturally increased the rep-

resentation from certain states. This point I believe to be an imaginary one. The section delegates are there in the interests of the scientific side of the A. M. A., act independently of their state delegation and, in some instances, do not associate with them.

Personally, I believe the adoption of this amendment would be a menace to the best interests of the A. M. A. First, because the presence of delegates in the House of Delegates, from the Scientific Assembly will assist in maintaining the highest possible standard of work conducted by the assembly. Second, because the delegates in question, on a number of occasions, held the balance of power that has saved the House of Delegates considerable annoyance.

It has not been customary for Iowa to instruct her delegates and in the absence of instructions your delegates have voted individually for what they considered the best interests of the A. M. A. and the profession at large. However, I believe your delegates would welcome an expression from this body on such an important matter as this.

Dr. B. L. Eiker of Leon, as alternate delegate to Dr. W. L. Allen of Davenport, delegate to the A. M. A., reported on the action of the House of Delegates on various questions, reading from the printed report of the Transactions of the House of Delegates of the American Medical Association. Upon motion, duly seconded and carried, the reports were favorably received.

Dr. H. J. Prentiss of Iowa City, moved that the present policy of representation of the Scientific Sections in the House of Delegates of the A. M. A. be retained, and that our delegates be instructed to act in accordance.

As a substitute for this motion, Dr. W. B. Small, Waterloo, moved that it is the expression of this House of Delegates that the present representation in the House of Delegates of the A. M. A. by section delegates from the Scientific Sections be continued. The substitute motion was duly seconded and carried.

NEW BUSINESS

The Secretary read a communication from Dr. Wm. C. Woodward, Executive Secretary, Bureau of Legal Medicine and Legislation, A. M. A., protesting against the training of veterans in the art of chiropractics by the Veterans Bureau, at government expense.

A motion was made that this communication be referred to a committee of three members, to be appointed by the Chair, authorized to take the subject under advisement and report at the Friday morning meeting; seconded and carried.

A letter from Major-General John F. O'Ryan, Counsel to the Select Committee on Investigation of Veterans' Bureau, United States Senate, requesting that the State Society aid in the selection of competent physicians to assist in the work with the Veterans' Bureau, was read by the Secretary, who moved that a committee be appointed by the Chair

to take this matter under advisement, and to report at the Friday morning meeting; seconded and carried.

The President stated that he would announce these special committees later.

SPECIAL COMMITTEES

Report of Committee to Act with Like Committee from the State Pharmaceutical Association.

Dr. Robert L. Parker of Des Moines, then made the report of the special committee appointed last year to consider with the committee from the State Pharmaceutical Association on the question of dispensing by practicing physicians. Dr. Parker recommend that a similar committee be continued, and that a representative from the State Society be appointed to attend the meeting of the State Pharmaceutical Association.

Dr. Small moved the adoption of the report. Dr. T. A. Burcham, Des Moines, amended the motion by asking that the present committee be continued. Dr. Small accepted the amendment, and the motion, as amended, was seconded, and carried.

The President announced that the Chairman of the Committee would be the Society's representative to the meetings of the State Pharmaceutical Association.

Dr. H. J. Prentiss of Iowa City, on request, reported that the cooperation of physicians over the state in sending in material for the anatomical department of the Medical School of the State University was very gratifying.

President Saunders then announced as the committee to act upon the letter from Dr. Wm. C. Woodward the following named physicians: Dr. W. L. Bierring, Dr. B. L. Eiker, Dr. W. B. Small.

The President also announced as a committee to act upon the communication from the Counsel of the Committee on Investigations of Veterans' Bureau, U. S. Senate, the following named physicians: Dr. H. J. Prentiss, Dr. A. B. Deering and Dr. A. P. Stoner.

The Secretary then announced the personnel of the Nominating Committee and stated that a meeting of the committee would be held immediately following the adjournment of the House.

Upon motion, the meeting adjourned at 10:30 a. m.

Third Meeting, Friday Morning, May 11

The House of Delegates met in the Ball Room, Hotel Ottumwa, and was called to order by the President at 8:15 a. m.

Thirteen officers and thirty-six delegates responded to the roll call.

President Saunders announced that a quorum was present, and the House proceeded to the transaction of business.

The minutes of the first meeting were read and approved.

The minutes of the second meeting were read, corrected, and approved.

REPORT OF THE COMMITTEE ON
NOMINATIONS

The report of the Committee on Nominations being the first order of business, Dr. C. A. Boice, Chairman of the Committee presented the report.

The report follows:

For President-Elect—Dr. Frank M. Fuller, Keokuk; Dr. C. P. Howard, Iowa City; Dr. S. A. Spilman, Ottumwa.

For First Vice-President—Dr. H. B. Gratiot, Dubuque.

For Second Vice-President—Dr. W. E. Long, Mason City.

For Treasurer to fill unexpired term—Dr. A. C. Page, Des Moines.

For Editor—Dr. D. S. Fairchild, Clinton.

For member Board of Trustees—Dr. T. E. Powers, Clarinda.

For Delegate to A. M. A.—Dr. M. N. Voldeng, Woodward.

For Alternate Delegate to A. M. A.—Dr. A. M. Pond, Dubuque.

For Medico-legal Committee—Dr. W. B. Small, Waterloo.

For Public Policy and Legislation Committee—Dr. W. W. Pearson, Des Moines; Dr. B. L. Eiker, Leon; Dr. D. J. Glomset, Des Moines.

For Constitution and By-Laws Committee—Dr. V. L. Treynor, Council Bluffs; Dr. C. B. Taylor, Ottumwa; Dr. T. B. Throckmorton, Des Moines.

For Publication Committee—Dr. D. S. Fairchild, Clinton; Dr. W. L. Bierring, Des Moines; Dr. C. J. Rowan, Iowa City.

For Finance Committee—Dr. E. C. McClure, Bussey; Dr. C. P. Frantz, Burlington; Dr. A. E. King, Blockton.

For Councilor—Fifth District, Dr. Geo. E. Crawford, Cedar Rapids; Sixth District, Dr. S. F. Gray, Albia.

For place of next meeting Des Moines.

It was moved and seconded that the report of the Nominating Committee be accepted. Motion carried.

Election of Officers

The House then proceeded to an election.

The President appointed Dr. Paul E. Gardner, New Hampton, and Dr. F. P. McNamara, Dubuque, to act as tellers.

The ballot was taken for President-Elect.

Forty-nine ballots were cast.

The President announced that no one had received a majority on the first ballot, and that a second ballot would be taken.

Forty-nine ballots were cast on the second ballot. Dr. Frank M. Fuller having received the majority of votes cast, was declared elected President-Elect by the Chair.

Dr. C. A. Boice, moved that as there was but one candidate for the other offices and committees, the by-laws be suspended and the Secretary cast the

ballot for the remaining officers and committees. The motion was duly seconded and carried.

The Secretary then cast the ballot, and the President declared the remaining officers and committees elected.

A motion was made by Dr. C. A. Boice that we rescind the action of the House of Delegates last year arranging a joint meeting with the Nebraska State Medical Society to be held at Council Bluffs, and that the meeting in 1924 be held in Des Moines. Seconded and carried.

REPORT OF COUNCIL

The report of the Council was presented by the Chairman, Dr. Paul E. Gardner, New Hampton, who moved that the report be accepted. The motion was duly seconded, carried, and the report was adopted.

The Council respectfully submit the following report to the House of Delegates:

The Council has met in accordance with the prescribed requirements and had one extra meeting jointly with the Field Activities Committee at Des Moines, January 11.

The county medical societies throughout the several districts are interested to a high degree in the activities and plans as proposed by the Society. The Council has failed to function during the past year as it should have done, but has followed the example of the past. However, during the coming year, it is the intention of the members to visit all of the county medical societies in the several districts, endeavoring to arouse more enthusiasm in all matters relative to scientific medicine. The Council, by motion, manifested its hearty approval of the Resolutions adopted by the Polk County Medical Society relative to the public welfare and the interest of medical science demanding a state and nation-wide campaign for the popularization of genuine medical knowledge, and the principles which govern trustworthy and ethical methods of practice of the healing art.

And that we recommend to the House of Delegates that our delegates be instructed to favorably report such action to the House of Delegates of the A. M. A. at the San Francisco meeting.

The Council appointed Dr. W. L. Bierring, Des Moines, to succeed himself on the Field Activities Committee.

Paul E. Gardner, Chairman.

REPORT OF FINANCE COMMITTEE

The report of the Finance Committee, in the absence of the Chairman, Dr. C. P. Frantz, was given by Dr. E. C. McClure, member of the Committee.

Upon motion, duly seconded and carried, the report of the Finance Committee was accepted.

The report follows:

We find the statements of the Secretary and Treasurer in so far as they pertain to the finances of the Society are entirely satisfactory with the exception that in the report of the Treasurer the outstanding check of April 26, 1922, the J. H. Welch Printing

Company, belongs to the expenses of the year ending April 30, 1922, and was so listed in last year's report, and should not be charged to the expenses of the year ending April 30, 1922.

E. C. McClure.

REPORT OF FIELD ACTIVITIES COMMITTEE

In the absence of Dr. W. L. Bierring, Chairman of the Committee, the supplementary report was presented by Dr. B. L. Eiker, Leon, member of the Committee.

Mr. President:

Your Committee on Field Activities recommend: That an appropriation of \$7,500.00 be made to carry on the work of this department for the ensuing year. We further recommend: that the delegates here present from the various component county societies make a full and complete explanation to their members of the work done by this committee, and explain to them that if the work is to be continued after this year the expenses will have to be met by an increase in the annual dues.

B. L. Eiker.

A motion was made and seconded that the report be adopted.

Dr. J. W. Cokenower, Chairman of the Board of Trustees, reported that the Board would approve of the appropriation of \$7,500.00 for the use of the Field Activities Committee for the ensuing year.

Dr. C. A. Boice, moved as an amendment to the motion that an assessment of \$2.00 per member be made.

The amendment was discussed by Dr. A. B. Deering, Boone; Dr. A. A. Crabbe, Traer; Dr. Enos Mitchell, Grand River; Dr. Clara L. Cronk, Bloomfield; Dr. E. E. Munger, Spencer; Dr. W. C. Newell, Ottumwa; Dr. J. W. Kime, Fort Dodge, and others.

A rising vote was taken on the amendment with the result that sixteen favored the raising of the dues and twenty-five were opposed. The President declared the amendment lost.

The vote on the original motion on the adoption of the report of the Field Activities Committee was taken by a rising vote.

The President declared the motion carried and the report of the Committee is adopted.

REPORT SPECIAL COMMITTEES

The President called for the report of the Special Committee appointed to act upon the letter read from Dr. William C. Woodward, Executive Secretary, Bureau of Legal Medicine and Legislation, A. M. A.

In the absence of the Chairman, Dr. W. L. Bierring, the report was given by Dr. B. L. Eiker, member of the Committee as follows:

The Committee appointed to consider the communication from Dr. William C. Woodward, Bureau of Legal Medicine and Legislation, A. M. A., recommend that the matter be referred to the incoming President. This is really a national business and it

seems to me that we should have opportunity to investigate. It really is a matter that should come before the American Medical Association at San Francisco this year. I would suggest that a motion be made to continue this committee and hear its report at some other time.

B. L. Eiker.

Dr. C. A. Boice, Washington, moved that the Committee be continued and make its report to our delegates to the American Medical Association; seconded and carried.

The report of the Special Committee on the communication from Major-General John F. O'Ryan, Counsel to the Select Committee on Investigation of Veterans' Bureau, United States Senate, was made by the Chairman, Dr. H. J. Prentiss, Iowa City, who moved that the report be adopted.

Your Committee appointed to consider the request of Major-General John F. O'Ryan, Counsel to the United States Senate Committee, appointed to investigate the charges of irregularities in the conduct of the Veterans' Bureau for Disabled Soldiers, beg to report as follows:

The purpose of this request, evidently, is to enable this U. S. Senate Committee to refer to reputable physicians in their respective communities to investigate apparent abuse in such communities as may be called to their attention by this U. S. Senate Committee.

We, therefore, recommend to this House of Delegates, that it endorse this request of Major-General O'Ryan.

We also recommend that the incoming President of the Iowa State Medical Society take proper means to select the names of reputable physicians for the purpose here mentioned and send the list of names to Major-General O'Ryan.

Respectfully submitted,

H. J. Prentiss, Chairman,
A. B. Deering.

It was moved that the report be adopted; seconded and carried.

It was moved by Dr. Thos. A. Burcham, Des Moines, that the by-laws be so amended that no member of the Society, who is not a citizen of the United States, shall be eligible to office.

This motion was referred to the Committee on Constitution and By-laws.

NEW BUSINESS

Dr. E. E. Munger of Spencer introduced the following Resolution and moved it be referred to the Council for such action as they deemed proper. Motion was seconded and carried.

The Resolution was so referred.

WHEREAS, the State Bankers Association of Iowa by means of placards conspicuously displayed in local banks and by publication of warnings in the press, do warn their customers against the investment of funds in blue sky propositions of one kind and another, and,

WHEREAS, it is common knowledge that many banks without knowledge of the facts do buy at a considerable discount promissory notes given by responsible makers to quack doctors and healers of one kind or another in return for a promise to cure disease real and imaginary, and,

WHEREAS, the principle of ethics of this association prescribes that "It is the duty of physicians, who are frequent witnesses of the great wrongs committed by charletans and of the injury to health and even destruction of life caused by the use of their treatment, to enlighten the public on these subjects and to make known the injuries sustained by the unwary from the devices and pretensions of artful impositors", and

WHEREAS, there has recently appeared in this state the most glaring fraud of all, and,

WHEREAS, knowing full well the power for harm and the entire absence of any possibility for good in this particular form of drugless healing, the Los Angeles County Medical Society through its Board of Councilors did on March 12, 1923, adopt the following resolution. Therefore, Be It Resolved that the Iowa State Medical Society adopt the same resolution, viz: "It shall be the sense of the Council that Abrams method of diagnosis is a fraud. Any physician practicing this method is ineligible to membership. If a member, he shall immediately cease this method of practice or charges of unethical conduct shall be preferred against him", and

BE IT FURTHER RESOLVED, that a copy of these Resolutions be mailed to the Secretary of this Society, to the President of the Iowa State Bankers Association and to the press of the State.

Dr. A. E. King of Blockton stated that the records of the Taylor County Medical Society had been destroyed by fire, and, therefore, moved that the President and Secretary be authorized to issue a new charter to the Taylor County Medical Society; seconded and carried.

As there was no further business to come before the House of Delegates, at 10:15, the President declared the House adjourned sine die.

Tom B. Throckmorton,
Secretary.

IOWA STATE MEDICAL SOCIETY OFFICERS
AND COMMITTEES 1923-1924

President.....	O. J. Fay, Des Moines
President-Elect.....	F. M. Fuller, Keokuk
First Vice-President.....	H. B. Gratiot, Dubuque
Second Vice-President.....	W. E. Long, Mason City
Secretary.....	Tom B. Throckmorton, Des Moines
Treasurer.....	A. C. Page, Des Moines

COUNCILORS

Term Expires

First District—R. S. Reimers, Ft. Madison.....	1925
Second District—D. N. Loose, Maquoketa.....	1927
Third District—A. G. Shellito, Independence, Secretary.....	1926
Fourth District—Paul E. Gardner, Chairman.....	1924
Fifth District—George E. Crawford, Cedar Rapids.....	1928
Sixth District—S. F. Gray, Albia.....	1928
Seventh District—Channing G. Smith, Granger.....	1924
Eighth District—Samuel Bailey, Mount Ayr.....	1924
Ninth District—H. B. Jennings, Council Bluffs.....	1927
Tenth District—W. W. Beam, Rolfe.....	1926
Eleventh District—G. C. Moorhead, Ida Grove.....	1925

TRUSTEES

J. W. Cokenower, Des Moines.....	1925
W. B. Small, Waterloo.....	1924
T. E. Powers, Clarinda.....	1926

DELEGATES TO A. M. A.

Donald Macrae, Jr., Council Bluffs.....	1924
W. L. Allen, Davenport.....	1924
M. N. Voldeng, Woodward.....	1925

ALTERNATE DELEGATES

D. N. Loose, Maquoketa.....	1924
B. L. Eiker, Leon.....	1924
A. M. Pond, Dubuque.....	1925

COMMITTEES

Medico-Legal

D. S. Fairchild, Sr., Clinton.....	1924
H. B. Jennings, Council Bluffs.....	1925
W. B. Small, Waterloo.....	1926

Scientific Work

O. J. Fay.....	Des Moines
Tom B. Throckmorton.....	Des Moines
A. C. Page.....	Des Moines

Public Policy and Legislation

W. W. Pearson.....	Des Moines
B. L. Eiker.....	Leon
D. J. Glomset.....	Des Moines
O. J. Fay.....	Des Moines
Tom B. Throckmorton.....	Des Moines

Constitution and By-Laws

V. L. Treynor.....	Council Bluffs
C. B. Taylor.....	Ottumwa
Tom B. Throckmorton.....	Des Moines

Publication

D. S. Fairchild, Sr.....	Clinton
W. L. Bierring.....	Des Moines
C. J. Rowan.....	Iowa City

Finance

E. C. McClure.....	Bussey
C. P. Frantz.....	Burlington
A. E. King.....	Blockton

Arrangements

O. J. Fay.....	Des Moines
Tom B. Throckmorton.....	Des Moines
A. C. Page.....	Des Moines
Two members from Polk County Medical Society.....	

Medical Library

D. S. Fairchild, Sr.....	Clinton
W. L. Bierring.....	Des Moines
O. J. Fay.....	Des Moines
G. H. Hill.....	Des Moines
C. E. Holloway.....	Des Moines

Field Activities Committee

Iowa State Med. Society.....	W. L. Bierring, Chrm., Des Moines
Iowa State Med. Society.....	President-Elect F. M. Fuller, Keokuk
Iowa State Medical Society.....	B. L. Eiker, Leon
Iowa State Board of Health.....	R. P. Fagan, Des Moines
State University Med. College Faculty.....	N. G. Alcock, Iowa City
State Conference of Social Work.....	James F. Edwards, Ames
Iowa Tuberculosis Ass'n.....	Mr. T. J. Edmonds, Sec'y, Des Moines
Field Director.....	F. E. Sampson, Creston
Advisory Secretary.....	Tom B. Throckmorton, Des Moines

TWENTY-SIXTH ANNUAL MEETING STATE
SOCIETY IOWA MEDICAL WOMEN

Ottumwa, May 8, 1923

The State Society of Iowa Medical Women had a program of unusual interest at their Twenty-sixth Annual Meeting held May 8 at Ottumwa. The meeting was also made most enjoyable by the numerous courtesies extended to the women by the local committees, including a luncheon at the Hotel Ottumwa, when the visiting women were guests of the Wapello county physicians.

In the scientific program an important place was given to preventive medicine. The results of the

work carried on under the Sheppard-Towner Bill, during the past year, were reported by Florence Johnston, M.D. of Cedar Rapids. She told of the prenatal care of Iowa mothers, as she had found it in city, town and county. According to the standards adopted by the Federal Children's Bureau, 96 per cent of primiparae, and 45 per cent of multiparae, received prenatal care that could not be called even fair. The figures for the city and town mothers were somewhat better.

Another paper emphasizing the importance of preventing some of the non-contagious diseases, such as nephritis and endocarditis, was given by Mae Habenicht, M.D. of Des Moines. She called attention to the fact that the medical profession has greatly improved the conditions of community health in the last three decades, now the work must be toward improving the health of the individual.

The address of the president, Eppie McCrea, M.D. of Eddyville, carried numerous important suggestions to the physicians for improving their efficiency.

The clinical papers were just as interesting. We had as our guest Mary E. Hanks, M.D. of Chicago, who told of her experiences with x-ray in a large series of gynecological cases. She considers x-ray, in experienced hands, equal to radium, and in some cases superior. Her greatest success was in the treatment of fibro-myomata of the uterus.

A most comprehensive, but very practical paper, by Emma Neal, M.D. of Cedar Rapids, on Sane Obstetrics was very enthusiastically received.

Two interesting case reports gave variety to the program, one by Maude Taylor, M.D. of Ottumwa, presenting a case of Acrodynia, and the other by Eva Shively, M.D. of Osceola, who told of her diagnosis and treatment of a Cretin recognized shortly after birth.

The two other scientific papers which completed the program were, one on the Etiology of Extra Uterine Pregnancy by Emma Ackerman, M.D. of Sioux City, and one on Tuberculosis of Children, by Clara Cronk, M.D. of Bloomfield.

After the program the Sisters of the Academy entertained us with a program by their students. Following a seven o'clock dinner at the Hotel Ottumwa, we heard some of the unusual experiences of Dr. Clara Whitmore, who practiced for six years in Shanghai, China. She said that obstetricians there cared for only abnormal cases, so it is not surprising that she attended fourteen cases of hydatid mole, and had 99 cases of eclampsia and 101 of placenta praevia. Another feature of the evening program, was the most excellent group of dances, given by the pupils of Miss Mary McNett of Ottumwa.

The officers elected for the year 1923-1924 were:

President—Julia Ford Hill, M.D., Des Moines.

Vice-President—Edna Sexsmith, M.D., Greenfield.

Secretary—Florence Johnston, M.D., Cedar Rapids.

Treasurer—Helen Johnston, M.D., Des Moines.

Julia F. Hill, M.D.,

Secretary.

AMERICAN DOCTOR WRITES OF MEDICAL NEEDS IN RUSSIA

American Colleges of Physicians Endorses Appeal for Medical Aid

Advance information on the report of the Health Section of the Commission on Russian Relief appointed by the National Information Bureau, Inc., was made public at the annual meeting of the American College of Physicians, which was held in Philadelphia last week. This information was contained in a letter from Dr. H. O. Eversole, who was a member of the Commission on Russian Relief, to Dr. Haven Emerson of the American Medical Aid for Russia. The latter organization has recently become the Medical Division of the American Friends Service Committee (Quakers). The letter was presented by Dr. Frank Smithies of Chicago, the General Secretary of the American College of Physicians. The American College of Physicians, after considering the letter, endorsed the appeal of the American Medical Aid for Russia for funds, medicines, medical instruments and literature to be used for medical aid in Russia.

Dr. Eversole's letter reads as follows:

"Dr. Haven Emerson,
American Medical Aid for Russia
103 Park Avenue,
New York City.

My Dear Mr. Emerson:

As public health advisor to the Russian Commission of the National Information Bureau, I had the opportunity of making a survey of health conditions in the larger cities, in normal country districts, and in the famine districts of Russia. You are conversant with the fact that Miss Bond and Miss Davis assisted me in this work, but I desire to emphasize the importance of their cooperation.

Our observations agree with the reports of the League of Nations Health Section as to typhus, recurrent fever, cholera, dysentery and small-pox. Great effort is being made to control epidemic diseases, but they are still to be found in all parts of the country to an extent that would tax the health resources of any country. Accurate medical statistics are not available, but the fact that in the past five years according to the most moderate estimates of epidemiologists, there have been 25,000,000 cases of typhus alone, gives some idea of the extent of the problem. Malaria is widespread, especially among the peasant population, and is still on the increase. In December the Commissariat of Health reports 8,000,000 cases registered. No statistician dares even estimate the inroads of tuberculosis upon an exhausted population in a chronic state of undernutrition.

One of the most serious problems which confronts the medical profession is the care of millions of children whose health has been damaged by adverse social and economic conditions. Studies made among 25,000 school children in Kiev and 22,000 in Kharkov,

both in the famine region, show 75 per cent and 82 per cent classified as tubercular on the basis of von Pirquet tests plus positive clinical findings in each case. A school dispensary in Petrograd reports that if marked anaemia and malnutrition are included 100 per cent of the 27,000 children examined in 1922 presented symptoms requiring treatment.

Hospitals, which have been taxed to the utmost to meet the epidemic situation are now running with greatly reduced efficiency owing to lack of necessary equipment and supplies. Surgical instruments are worn beyond the possibility of repair. The American Relief Administration and other foreign relief organizations have sent great quantities of medical supplies, but Russia is so large and so impoverished after the many years of isolation and disease that we found medicines only in small quantities or entirely lacking in all the districts we visited in Russia. In many of the so-called normal areas, which have never been touched by foreign relief, the lack of essential supplies is even more acute than in the famine area. Dispensaries, while still running, are hampered by the lack of even the simplest drugs. For example, one district in the Samara Government, reporting 4,500 cases of malaria, had not one grain of quinine.

In spite of these material handicaps, medical work in Russia is not an incoherent effort of individual physicians. The central Commissariat of Health in Moscow is a real organization, with local departments in every government functioning on parallel lines. It has a carefully thought out program covering every phase of preventive and curative work, formulated and directed by a scientific council, including physicians of international reputation. Constructive work has been hampered by the emergencies of famine and epidemic, but there is no reason to believe that it will not be further developed as soon as economic conditions permit.

Russian doctors and nurses as a result of their self-sacrificing efforts to maintain a high standard of medical work, have reached the point of exhaustion. It is certain that at least 75 per cent of these men and women are existing on incomes inadequate for even the bare necessities of food and clothing. Great numbers of doctors and nurses have died in fighting epidemics, others have contracted tuberculosis, and those who remain are so weakened by years of privation and overwork that they have slight resistance to disease. All achievement is being paid for in terms of undermined health and death among the medical personnel, but Russian doctors everywhere, while admitting their desperate economic condition, made only one appeal for themselves—medical literature from the outside world.

In my opinion the point of attack in the present health situation of Russia is to preserve the medical personnel and to supply their essential professional needs. There is great need for food and for instruments, drugs, medical supplies and literature to make their work effective. I trust that the National Campaign of Physicians and Surgeons in behalf of med-

ical aid for Russia will bring this situation so forcibly to the attention of the American public that immediate and generous aid will be given.

Yours sincerely,

H. O. EVERSOLE."

IOWA STATE UNIVERSITY NEWS NOTES

Don M. Griswold, M.D.

Dr. Austin C. Davis of the department of theory and practice of medicine of the College of Medicine, State University of Iowa, will leave the department the first of July and go to the heart department of the Mayo Foundation and Clinic, Rochester, Minnesota.

Dr. A. M. Smythe, resident physician in the department of pediatrics of the State University of Iowa for the past year has accepted a position as clinical assistant in the department of pediatrics under Dr. A. E. Park at the Yale Medical School, New Haven, Connecticut.

Dr. Van Dyke, assistant in the department of orthopedics of the State University of Iowa has just returned from a two weeks auto tour to Colorado and reports of having had a very fine vacation trip.

Dr. Clarence Broderick who for the past few months has been taking post-graduate work in tuberculosis at the State Sanatorium at Oakdale, has gone into private practice at Newton.

Dr. Bert W. Caldwell has been appointed superintendent of the University Hospital of the State University of Iowa.

Dr. James E. Russell, Jr., clinical assistant in pediatrics of the State University of Iowa one year ago, and pediatricist in a group of physicians in Ft. Dodge the past year has gone to Europe and will spend his time in visiting the various clinics in Paris, Vienna and Berlin.

Examinations for state medical license were recently held at the College of Medicine. Forty-nine graduates of this college took the examinations. Two graduates from Austrian colleges and two from other colleges in this country were likewise examined.

Dr. A. A. Eggleston of the class of 1919, was married to Miss Phyllis Brown of Wyoming, Iowa, on May 16, 1923. Miss Brown was a graduate of the Nurses' Training School and had been a board supervisor for the past year. Dr. Eggleston is practicing at Ryegate, Montana.

Dr. N. W. Loud of the Student Health Service was called to Waymouth, Massachusetts, by the death of his mother.

Miss Helcna Stewart, director of public health nursing, just returned from a state conference of public health nurses at Topeka, Kansas. Miss Stewart gave a paper on "The Preparation for Public Health Nursing."

Miss Margaret Kammerer, instructor in visiting nursing and Pearl Kammerer, social worker at the ear, nose and throat clinic, will attend the meeting of the National Tuberculosis Association at Los Angeles in June.

On invitation of the Johnson County Medical Society, Doctors Prentice and Johnson have held eight prenatal clinics in different parts of Johnson county during the past month.

Dr. Don M. Griswold, state epidemiologist, gave a paper on the "Prevention of Diphtheria" at a meeting of the staff of Bethany Hospital at Rock Island, Illinois, June 7.

SOCIETY PROCEEDINGS

Boone County Medical Society

A joint meeting of the Boone County Medical Society and the dentists of the county was held in the rooms of the Chamber of Commerce Friday night with Dr. R. C. Shane of Pilot Mound presiding.

At the meeting it was decided to stage in Boone county a campaign to interest the girls of the county in the nursing profession. At the present time this field is far from crowded and the opportunities are great. In order to further the campaign in the county a committee of physicians has been named to line up meetings which will be addressed by members of the county society. At all consolidated schools, the girls will be told of the chances for development in the profession.

A short program was given with Dr. L. A. Peters speaking on the subject, Apical Infection of the Teeth, from the standpoint of the dentist, and Dr. N. M. Whitehill from the standpoint of the physician.

Educational movies were shown under the direction of the Rev. Peter I. King.

Buchanan County Medical Society

The meeting of the Buchanan County Medical Society was held recently in the Woodman Hall, preceded by a dinner. The following members were present: Drs. B. B. Sells, A. G. Shellito, F. F. Agnew, J. C. Shellito, C. W. Tidball, H. A. Householder, R. A. Stewart, N. W. Johnson, H. H. Hunt, G. C. Murphy, N. M. Smith of Stanley, and J. W. Barrett, Jr. During the general business of the meeting the following motion was made and seconded: That those dairymen who furnish milk within the limits of the city of Independence be required to have their cattle tested for tuberculosis and the report submitted to the council every six months until their herd becomes an accredited herd when a yearly report shall

be submitted. Dr. F. F. Agnew delivered a paper on Community Welfare. Dr. H. A. Householder of Winthrop gave a Case History.

Butler County Medical Society

The Butler County Medical Society reports one of its most successful meetings held at Allison, June 8. Dr. J. Wallace of the Rockefeller Foundation was present and outlined plans for a county unit. Endorsement was given to the employment of a full-time health officer also to the employment of another county nurse.

Dr. L. C. Kern, Waverly, presented a paper on Tuberculous Peritonitis and its Treatment; Appendicitis was the subject of paper by Dr. W. A. Rohlf, Waverly; Dr. C. E. Dakin, Mason City, read a paper on Final Results from Treatment of Fractures of the Arm (lantern demonstration); Dr. C. C. Smith, Clarksville, read a paper on Heredity, and Dr. Bruce Ensley, Shell Rock, reported a Case of Measles. The next meeting will be held at Allison in August, at which time Dr. A. G. Shellito, district councilor, and Dr. F. E. Sampson, field director, will be present. This meeting will be open to the public at which time matters concerning public health will be discussed.

Officers were elected as follows: Dr. M. B. Call, Greene, president; Dr. C. F. Roder, Aredale, vice-president; Dr. R. M. Mayne, Greene, secretary-treasurer.

Crawford County Medical Association

The annual meeting of the Crawford County Medical Association was held at the Hotel Denison Thursday evening, May 17, with a goodly number in attendance. Following the business session a banquet was served.

The subject of Fractures of Long Bones was discussed by Attorney Floyd E. Page, who gave an interesting talk on the legal aspect.

Members of the society in attendance were: Drs. Meehan, Rowe, Brannon, Wilkinson and Sievers and their ladies of Denison, and Dr. and Mrs. H. D. Jones of Schleswig; Dr. and Mrs. M. M. Loomis of Manilla; Dr. and Mrs. W. A. Garner of Kiron, and Dr. C. F. Little of Vail.

Fremont County Medical Society

The Fremont County Medical Society met Wednesday evening, May 2, at Tabor.

The society elected the following officers for the ensuing year: President, Dr. William Kerr, Randolph; vice-president, Dr. R. C. Danley, Hamburg; secretary and treasurer, Dr. A. E. Wanamaker, Hamburg. The coming year will be the sixteenth consecutive year in which Dr. Wanamaker has held the office of secretary.

The speakers of the evening were from the University of Nebraska, and they spoke on the following subjects:

Dr. Frank Conlin, Gastric Ulcer.

Dr. E. T. Manning, Urinary Sediment and Its Interpretation.

Dr. C. A. Hull, Head Injuries.

The next meeting of the society will be held at Sidney.

Harrison County Medical Society

The Harrison County Medical Society held a meeting in Logan May 31. This was a business session and while matters of a professional nature were talked over, a good dinner enjoyed, officers elected, etc. The officers for the year are as follows: Dr. Walter Cook, Pisgah, president; Dr. Harry C. Dunlavy, Logan, vice-president; C. A. Heise, Missouri Valley, secretary-treasurer. It was decided to hold a joint meeting with the medical men of Monona county in June.

Iowa County Medical Society

A meeting of the Iowa County Medical Society was held May 31 in the Pine Grove at South Amana. The doctors and their families enjoyed a picnic lunch at one o'clock. The scientific program was given in the afternoon: a paper on Colitis by Dr. P. B. Welch, Cedar Rapids; Dr. C. H. Hermann, Amana, reported an interesting case of Aneurism of the Aorta with illustrations. After the meeting, refreshments were served by the Amana Society. Twenty members and visiting physicians were present.

F. O. B.

Sac and Ida Counties Medical Societies

A joint meeting of the Sac and Ida County Medical Societies was held at the Park Hotel at Sac City on the evening of May 18, 1923. After a six-thirty dinner a round table discussion of the County Unit System and State Medicine was held. Dr. Morehead of Ida Grove gave a particularly interesting talk on those subjects. The Towner Maternity Plan was also discussed.

The following officers for the Sac County Medical Society were elected for the ensuing year: President, Dr. F. H. McCray, Schaller; secretary, Dr. James McAllister, Odebolt; treasurer, Dr. J. H. Stalford, Sac City.

James McAllister, Sec'y.

Polk County Medical Society

The regular meeting of the Polk County Medical Society was held April 24, 1923, at the library of the Chamber of Commerce. At this time we enjoyed an illustrated lecture by Dr. Vincent O'Connor of Chicago, on the Modern Methods of Urological Diagnosis and Treatment.

This society had the pleasure of extending to our editor, Dr. David Sturgis Fairchild, a testimonial of his fiftieth anniversary as a member of the Iowa State Medical Society. He was presented with a

walking stick to show our appreciation for what he has done for this society for the State of Iowa.

This society was ordered to subscribe for 130 copies of Hygeia, to be presented as suggested by the committee.

A resolution was presented as to the death of Dr. A. Leonard of Mitchellville, Iowa.

It was moved and duly seconded and unanimously carried, that we extend to Governor Kendall, our appreciation for vetoing the gasoline tax bill.

President Chas. Ryan read a report of the activities of the Medical Library from June, 1922 to March, 1923. It clearly showed that the library is becoming a great help to the profession of the state.

April 28, 1923.

Dr. David Sturgis Fairchild,
Clinton, Iowa.

Dear Doctor:—

Enclosed please note a resolution adopted, duly seconded and unanimously carried by the Polk County Medical Society of the honor bestowed upon us at the last regular meeting of the society in the form of a testimonial given in your honor, celebrating your fiftieth anniversary as a member of the Iowa State Medical Society.

I remain,

Fraternally yours,
H. E. Ransom, M.D.,
Secretary.

This report of the April meeting is made by Dr. Gershom H. Hill.

The president, Charles Ryan, having learned that Dr. Fairchild had been a member of the State Society for fifty years, decided to celebrate the anniversary by making him the guest of honor at this meeting. He appointed Doctors Conkling, Hill and Schooler a committee to prepare a suitable program.

At the opening of the meeting the president appointed Doctors Cokenower and Priestley to escort Dr. Fairchild to a seat at his side, where the committee also sat. The following resolutions were read by Dr. Conkling, and by a rising vote were unanimously adopted:

Des Moines, Iowa, April 24, 1923.

Be It Resolved:

By the Polk County Medical Society that we extend our sincere congratulations to our fellow member, Doctor David Sturgis Fairchild, upon his privilege to celebrate his fiftieth anniversary as a member of the Iowa State Medical Society; and as a slight token of our esteem and appreciation of his many years of service as a member of the Polk County Medical Society, we hereby present him with this walking stick, the head of which is symbolical of a fiftieth anniversary, and also symbolizes the valuable service rendered to the medical profession and to the citizens of the State of Iowa.

Be it further resolved that a copy of these resolutions be made a part of the permanent records of

the Polk County Medical Society, and that a copy be furnished Doctor Fairchild.

Respectfully submitted,
Wilbur S. Conkling, M.D.,
Gershom H. Hill, M.D.,
Lewis Schooler, M.D.,
J. Chas. Ryan, M.D., President,
H. E. Ransom, M.D., Secretary.

Next followed a reminiscent address by Doctor Schooler describing some of their experiences as early day surgeons when conditions were new and devoid of resources. The changes from ancient to modern modes of transportation. Their cooperation as instructors and as college builders, their loyalty to and affection for each other.

Doctor Fairchild was born in Vermont. He attended the University of Michigan, graduated from Albany Medical College in 1868. He began practice at High Forest, Minnesota, in 1869. Here he was soon married to his worthy and helpful wife. Since Rochester was not far away he at once became a disciple of the father of the Mayo Brothers. He has been intimately acquainted with William and Charles and their clinic ever since.

Besides practicing medicine at Ames he taught physiology and comparative anatomy in the Iowa State College from 1879-93. He was also professor of surgical pathology in Drake University College of Medicine 1882-1909, dean 1903-09, and division surgeon C. & N. W. Ry. since 1883.

He is an active member of numerous associations of physicians and surgeons. He is a Mason, an Episcopalian, and a useful citizen of Clinton. He is a most successful editor of the Journal of the Iowa State Medical Society.

His son, D. S. Fairchild, Jr., has been almost constantly in the service of the Federal Government for many years, first in the Spanish American War, next in the late World War, and now in the enlisted sanitary department at the Panama Canal Zone. An important factor of the government is a sanitary court, presided over by a physician. His rank is that of colonel.

Dr. H. A. Reynolds, a son-in-law of Dr. Fairchild, was major during the late war, serving in this country. He is now in charge of the psychopathic department of the Federal Hospital in Boston, Massachusetts.

Tama County Medical Society

Members of the Tama County Medical Society and their wives were guests of Dr. Jacob Breid, superintendent of the government Indian sanatorium, at the institution west of Toledo. Twenty-one were present for a fine dinner at noon, after which an inspection of the sanatorium was made and a regular meeting of the society held. A round table discussion of the problems of the country doctor was the main feature of the meeting. The Traer physicians who attended were greatly impressed with the conscientious work Dr. Breid is doing for the more

than eighty Indian children who are inmates of the sanatorium. The patients are from many middle western states. The doctors elected new officers of their society for the coming year, with Dr. Allen, Tama, as president; Dr. McDowall, Gladbrook, vice-president; Dr. Whaylen, Tama, secretary, and Dr. Crabbe, Traer, delegate to the state medical convention. The next meeting is to be at Garwin.

Woodbury County Medical Society

Forty Years of Medicine in Woodbury County, was the topic of an address by Dr. W. H. Dewey of Moville, before the Woodbury County Medical Society in a meeting Thursday, April 19. The meeting was held at the Commercial Club at Moville.

Modern hospitalization was praised by the veteran physician, who related some of the handicaps under which a doctor labored when he first came to this county. There were few roadways and railroads. He touched on various phases of professional improvement during four decades of practice.

Dr. S. E. Sibley of Sioux City, who has practiced medicine in Woodbury county for thirty years, followed Dr. Dewey and told of his experiences.

More than sixty-five doctors, members of the society from various county towns, attended the meeting. At a brief business session the baby clinics were discussed. A social program followed.

Woodbury County Medical Society

Approving the policies of the Welfare Bureau, the Woodbury County Medical Society Wednesday night pledged the services of the society to the free clinic which will be conducted by the bureau during the coming year.

Dr. Victor Brown, president, presided, and Dr. William Jepson gave a report of the state meeting of the Iowa Medical Society. Dr. I. E. Nervig read a paper on Free Clinics.

HOSPITAL NOTES

After a year and a half of planning, construction and outfitting, possession was taken of the new Sacred Heart Hospital Building on the east side of Le Mars. Patients were transferred from the old place on Central avenue, and are now being accommodated in modern hospital surroundings second to none in Iowa.

Improvements are to be made at Iowa Lutheran Hospital within the next few months, as a result of recommendations made at the Iowa Lutheran Conference of Augustana Synod, at Sioux City, Iowa.

The new \$500,000 Methodist Hospital will be located on the site now occupied by the Shesler Deaconess Home, 1308 Nebraska street, Sioux City, and adjoining property on the east.

The home has been purchased for this purpose from the Women's Home Missionary Society of the

Northwest Iowa Conference of the Methodist Episcopal Church for a consideration of \$55,000. Additional room will be furnished through the purchase of the house and lot directly east of the home.

Dr. W. J. Herrick, president of the Wapello County Medical Society, will make the principal address at the graduation exercises of St. Joseph Hospital Training School.

A final check of the estate of John Corton made by the executor shows that St. Francis Hospital of Waterloo, will receive \$36,809.80 from the estate under the terms of the will as limited by a statute which does not permit of more to a charitable or religious institution than one-fourth of the net estate where a child, spouse or parent is living.

AN APPRECIATION

In the death of Dr. Agnes Eichelberger of Sioux City, the State Society of Medical Women of Iowa has lost one of its most efficient and best known members.

Soon after organization of the society in 1898 she became a member and was one of its early presidents. Her presence always gave pleasure, and her papers and discussions were of a character that showed close touch with the practical side of medicine as well as the knowledge of its scientific advancement.

Her stay at the state meetings was brief, as her professional duties seemed ever requiring her presence at home. Seldom has a woman physician enjoyed the absolute confidence of the medical profession as did Dr. Eichelberger. Some of her most serious obstetrical cases were the wives of medical men. It seems unusual for one to so nearly attain her ambition, as did Dr. Eichelberger. A love of science, and a philanthropy not lost in years of experience and knowledge of human failures, led her on in her successful career.

She was born in Lewiston, Illinois, in 1864, was graduated from the Women's Medical College of Chicago in 1888. She then became an interne in the Mary Thompson Hospital for Women and Children. In 1889 she went to Sioux City, Iowa, where she practiced for thirty-two and one-half years. She died in California February 28, 1923.

She founded the "Women's and Babies' Home" in Sioux City in 1898. "With the head of an executive and the greatest of mother heart" she directed the building of the Florence Crittenden Home in Sioux City in 1906, and the Maternity Hospital in 1914.

And while we miss her, we bow in submission to the Divine Master who doeth all things well. Our tribute to her is expressed in an appreciation of her great work which will live long after her.

Kate Mason Hogle,
Mary A. Coveny,
Jeannette F. Throckmorton,
Committee.

OBITUARY

Dr. Benjamin Thompson died at his home in Tama, April 22, 1923, at the age of seventy-eight years. He was born in Wayne County, Ohio, October 5, 1844. The Thompson family moved to Lee county, Iowa, in 1851, and later to Scott county, where Dr. Thompson received his preliminary education in the Scott county public schools and at the Davenport high school. In 1870 Dr. Thompson graduated from the Philadelphia Eclectic Medical College and immediately thereafter located at Tama. Soon after locating in Tama he was appointed surgeon for the Chicago & Northwestern Railway Co., which position he held up to the time of his death.

Dr. Thompson was a member of the Tama County Medical Society, a fellow of the American Medical Association. He was also a member of the American Association of Railway Surgeons, of which he was at one time president. He was also a member of the Northwestern Railway Surgical Association and some years ago its president.

Dr. Thompson was well known as a man of independent views and aggressive as a medical practitioner. He followed his own independent ideas in relation to his work and in politics. He was much esteemed by the people of Tama and for several years served as mayor.

Resolution

Resolution of Tama County Medical Society, April 26, 1923, upon the death of Dr. Benjamin Thompson of Tama, Iowa:

Whereas providence has removed from the home and from our midst Dr. Benjamin Thompson of Tama, Iowa, therefore,

Be it resolved, that we extend to his wife and family our deepest sympathy in the loss of an affectionate husband and a loving father.

Resolved that a copy be sent to Mrs. Benjamin Thompson and family, that a copy be sent to Iowa State Medical Journal, and that a copy be spread upon the records of the Tama County Medical Society.

Signed,

A. A. Crabbe, Traer,
P. F. Saunders, Garwin,
K. C. Fee, Toledo.

Dr. E. H. Knittle of Waterloo, died May 17, 1923. Dr. Knittle had practiced medicine in Waterloo for twelve years.

Dr. William J. Vogt, formerly of Iowa City, died in Denver April 10, 1923.

Dr. Vogt was the son of Dr. William Vogt, who located in Iowa City in 1848 and gained an enviable reputation. It is said of him that he never presented a bill for medical services. Dr. Vogt, Sr., died at his home in Iowa City in August, 1873.

Dr. William J. Vogt was born in Iowa City, graduated in medicine from the Iowa University School

of Medicine in 1881, but on account of delicate health, was not able to practice in Iowa City and engaged in the drug business at Le Mars; later removed to Omaha, where he practiced as his health would permit until 1912, when he moved to Denver, hoping to regain health, where he died.

Dr. J. F. Cole died at his home in Oelwein April 20, 1923, after an illness of two years. Dr. Cole was sixty years old and had practiced in Oelwein thirty-five years. He was a graduate of the Iowa University Medical School.

Dr. Cole enlisted in the late war and was stationed at Camp Grant during 1918.

Dr. C. A. Mackey recently died at his home in Truro, Iowa, following a lingering illness superinduced by Bright's Disease.

Dr. F. P. Culverson, sixty-eight years of age, one of Greenfield's oldest practicing physicians, died at his home, Friday morning, April 20, at 5 o'clock after an illness of long duration. For the past sixteen months he has been confined to his bed, following a stroke of paralysis.

Dr. Frank P. Culverson was born January 14, 1855, departed this life April 20, 1923, age sixty-eight years, four months and six days. He was the son of Mr. and Mrs. James Culverson, who were residents of Kentucky. They moved to Davis county, Iowa, where Dr. Culverson was born and reared to young manhood.

Dr. Culverson attended and graduated from Medical College at St. Joseph, Missouri in 1879.

Dr. H. A. Leipziger of Burlington died May 1 at the Burlington Hospital, his death resulting from a fall at his home 2034 Sunnyside avenue, in which he fractured his left leg. His condition became serious from the start and Dr. S. C. Plummer of Chicago, was called into consultation with local physicians attending him.

Dr. Leipziger founded the Sunnyside Community center four years ago served as its first president and was its president at the time of his death. He was also president of the central association of community centers of the city.

He was affiliated with the Des Moines County Medical Society, the Iowa State Medical Association, the American Medical Association and the National American Railroad Surgeons Association, having served for many years as surgeon for the Rock Island Railroad at this point.

Henry Alfred Leipziger was born in New York, April 3, 1858. He received his elementary education there and was graduated from the Bellevue Hospital Medical School on March 17, 1881. Later he went to Europe to complete his education.

He came to Burlington in 1884 and built up a practice, and continued to live here until 1911, when the family moved to New York. They only re-

mained there three years, however, and returned to Burlington in 1914.

Dr. Leipziger married Mrs. Carrie Steinhardt in Milwaukee, Wisconsin, in 1889. She died here three years ago.

Dr. George Miller Luckey was born on the ninth day of June, 1874, at Hamilton, Illinois, the son of Dr. George J. Luckey and wife, Frances Ward Luckey.

He graduated from Knox College, Galesburg, Illinois, in 1897 with the degree of bachelor of arts and from Rush Medical College in 1901. He was for several years just past president of the Benton County Medical Society. He was also a member of the Radiological Society of North America. He ranked with the best in his class throughout his school, college and university life.

His death, April 3, came as a distinct shock to this entire community. Herewith find enclosed copy of an editorial from the Cedar Valley Daily Times under date of April 3, 1923, which is a beautiful tribute and well deserved.

Dr. George Has Left Us

It isn't often an editor of a newspaper sheds tears when death removes some citizen; death comes often to our midst and it becomes a part of our work, painful though it is at times, to chronicle the event. But the death of Dr. George Luckey seems so different, and tears come unbidden.

We don't believe there ever was a better man. This statement now made following his death, was made many times before his death. Kindly, sympathetic, almost child-like in his faith in people he represented all that was beautiful in human nature. None of the ugliness that disfigures most of our natures seemed to have touched him. He was modest to such a degree that he failed to capitalize on his abilities to the extent he was entitled to. Kind, plain, unassuming, but exceedingly well learned, Dr. George went his way believing in the inherent goodness in man and ever ready to lend a helping hand to those distressed.

As a boy he carried off class honors in school, but the folks at home never learned of his attainments excepting through others. Possessed of a mind better equipped than is the common lot of men he dwelt among us, earnest, zealous, always anxious to learn and always deeply interested in everything pertaining to his profession.—Cedar Valley Times, April 3, 1923.

BOOK REVIEWS

THE MEDICAL CLINICS OF NORTH AMERICA

San Francisco Number. W. B. Saunders Company.

In this number eighteen subjects are presented by as many authors. We mention a few subjects.

The Diagnosis and Treatment of Gall-Bladder Disease, with special reference to the Meltzer-Lyon Test, including a classification of cases for treatment by Dr. Walter C. Alvarez. Considerable interest has been manifest in this plan of treatment and the subject is well worth serious consideration.

The Management of Diphtheria is the subject of a clinic by Drs. E. C. Fleischner and E. B. Shaw.

Bacterial Asthma in Children, The Role of Infection and the Value of Vaccine Treatment is presented by Dr. Samuel Hurwitz.

Fever of Long Duration is the subject of an interesting clinical study by Dr. LeRoy H. Briggs.

This number is an interesting exposition of San Francisco medicine.

ESSENTIALS OF SURGERY

A Text-Book of Surgery for Student and Graduate Nurses and for Those Interested in the Care of the Sick. By Archibald Leete McDonald, M.D. The Johns Hopkins University; 49 Illustrations; Second Edition; Revised. Price \$2.50 Net. J. B. Lippincott Company.

This is one of the Lippincott manuals for the use of training schools for nurses. The purpose of the book is to present the essentials of surgery in a manner suited to the use of nurses in training and for reference after graduation, in their general work.

Dr. McDonald has had a large experience in this work, in the department of anatomy, University of North Dakota, and in the Nurses' Training School of St. Luke's Hospital, Duluth. While the principles of surgery have been fully presented, the technic of surgical operations have been omitted.

The Lippincott Company is to be again commended for the presentation of this series of manuals so well adapted to the use of training schools for nurses.

THE RIDDLE OF THE RHINE, CHEMICAL STRATEGY IN PEACE AND WAR

By Victor Lefebure, Officer of the Order of the British Empire, Chevalier of the Legion of Honor; Officer of the Crown of Italy, Fellow of the Chemical Society. With a Preface by Marshal Foch and an Introduction by Field Marshal Sir Henry Wilson, Bart. E. P. Dutton & Company, New York.

This is an interesting book. It presents an outline of the history of the development of German chemical warfare and the surprise that came upon the world at the time of the March assault of 1918 and the cry of indignation that went up when the first reports came to the public. The horror of chemical warfare has never left the minds of the people, and while the necessity of chemical warfare on the part of the Allies was recognized, yet the inhumanity of it has not been forgotten. This the author recognizes, but holds that no international agreement would be observed when the necessities

of war should arise and that whatever sentimental views might be held in time of peace, must be abandoned in time of war. The author therefore believes that nations interested in their own welfare, must be prepared for chemical warfare.

The author in his argument points out the German organic chemical monopolies which had put them in a position to transform their synthetical chemical and dye works into operation to manufacture poison gases in quantity in 1918, which was followed at a later period by France, England and America.

Granting that agreements to discontinue chemical agencies in war cannot be enforced, we can see no reason for the various governments not carrying on investigations and preparations to meet a chemical warfare if the necessity should arise. But we suspect that the real purpose of the argument is to create private monopolies in the nature of synthetic drugs, chemicals and dyes, which not long ago the Chemical Foundation and the Chemical Society asked congress to do, but was refused. It is difficult to see how restrictive legislation could influence other nations and inasmuch as it is a matter of national defense, the government should be the agency for war preparation and not private concerns.

It is an interesting and instructive book and may well be considered a part of the history of the Great War, but not likely to increase our affection for chemical or poison gas warfare.

DISEASES OF THE RECTUM, ANUS AND COLON

By Samuel Goodwin Gant, M.D., L.L.D., Professor and Chief of the Department for Diseases of the Colon, Rectum and Anus at the Broad Street Hospital; Graduate School of Medicine, New York City. Three Octavo Volumes, Totaling 1616 Pages, with 1128 Illustrations of 1085 Figures and 10 Inserts in Colors. W. B. Saunders Company, 1923. Price, Cloth \$25.00, Net.

Dr. Gant is well known to the medical profession as a voluminous and authoritative writer on diseases of the colon, rectum and anus, and while he has written other books on similar subjects, we are assured that this is an entirely new work and not a revision of previous books.

The immense material has been distributed through three volumes, to the great convenience of the reader, and the broad pages and heavy paper has given greater opportunity to insert cuts and illustrations and to bring them out in a truly artistic manner. The type is exceptionally fine. The arrangement of the subjects treated and the voluminous index, means an economy of time in seeking for matters needed for reference.

Considering the work as a whole, the first volume presents a series of studies on the embryology of the stomach and intestinal tract; the anatomy of the rectum and anus; followed by a consideration of the

diagnostic significance of manifestations pointing to anorectal disease, examination and diagnosis of the co-existing relations between anorectal and other diseases; an important and instructive introduction to the study of the subject under consideration.

Chapter six is devoted to the subject of anesthesia. In this chapter the author reviews the different methods of anesthesia particularly adapted to this class of surgery and arrives at the conclusion that in his practice more than 80 per cent anorectal operations may be done under local infiltration anesthesia. He points out the exceptional cases where general anesthesia is better.

Three chapters are devoted to malformations. A short but interesting chapter is given to backache and sciatica, including sacro-iliac relaxation, displacement and inflammation. Without referring to all the chapters, we mention chapter twelve, which relates to a rather common, but often neglected, condition, hypertrophied papillae, which frequently causes much physical and mental distress, easily remedied.

Then follows extensive discussion of perineal, ischiorectal, perirectal and pelvirectal abscesses, and different types of anorectal fistula and hemorrhoids.

Chapter one of second volume considers hemorrhage of the rectum and anus often a serious condition and of serious import and should receive prompt attention.

Another chapter entitled to patient study is pruritus ani, scrotic and vulva, an exceedingly distressing condition, difficult to deal with.

The greater part of volume two is devoted to non-malignant and malignant growths, syphilis and tuberculosis. The latter part of this volume begins a consideration of the small and large intestines, the anatomy and physiology, and many conditions relating to them. Wounds and injuries of the abdomen, small intestines, colon and sigmoid, foreign bodies, concretions, etc.

In volume three are continued intestinal diseases, intestinal parasites, tuberculosis, syphilis, intestinal obstruction, stasis, colostomy, constipation and allied conditions.

We are able in this review only to point out in a general outline the contents of these three exhaustive volumes treating as they do of the many diseases of the intestinal tract, not including the stomach or the digestive glands as separate entities.

CLINICAL SYMPTOMATOLOGY OF INTERNAL DISEASES; PART TWO, GENERALIZED PAIN

By Prof. Dr. Norbert Ortner, Vienna.
Only Authorized Translation Into the English Language of the Second German Edition, by Francis J. Rebman. With an Introduction by Thomas Webster Edgar, M.D., New York, New York Medical Art Agency.

Some time ago Professor Ortner published a volume on "Abdominal Pain" of much interest and value

in the diagnosis of abdominal conditions. Now we have before us a volume on "Generalized Pain" by the same author. The value of pain in the symptomatology of disease is fully recognized, and Part Two will be a valuable supplement to Part One, on "Abdominal Pain."

The first chapter relates to pain in the heart and the cardiac region. We are reminded of the pain in the heart of pericardic and myocardic origin, over-exertion, paroxysmal tachycardia, arteriosclerosis, aneurysms of the aorta and other conditions that relate directly to the heart; Basedow's disease, epilepsy, chronic nicotine poisoning, tabes dorsalis, nervous or hysterical angina pectoris, vasomotoric angina pectoris and various conditions that are often referred to the heart.

Then follows Pain in the Sacrum, Shoulder, Back and Neck, which are numerous and important and not infrequently of great significance and demand a close analysis. These pains are so frequent that we are prone to attach but small importance and thus overlook some serious conditions. Pain in the chest leads us to a more serious condition because of possible involvement of important organs and of dangerous underlying diseases. Pain in the extremities have a wide significance and are entitled to careful study. The character, location and persistence of the pain generally enable one to reach a conclusion, as in adipositas dolorosa, arteriosclerosis, occupational neurosis, ischias, neuritis, Morton's disease, and the neurasthenias.

Pain in the muscles constitute an important chapter; they are so often attributed to rheumatism that errors of diagnosis are very numerous. The same plan of treatment is extended to pain in bones, joints and head. The book is very interesting in that it takes up the symptoms of pain and analyzes its significance, not by classifying pain or giving the distribution of nerves, but rather by a familiar discussion of pain and what it means or may mean. The book is written in a most attractive style as one might read a story relating to familiar things, not only is it readable, but also instructive.

AN INTRODUCTION TO THE PRACTICE OF PREVENTIVE MEDICINE

By J. G. Fitzgerald, M.D., F.R.S.C., Professor of Hygiene and Preventive Medicine and Director Connaught Antitoxine Laboratories, University of Toronto. Assisted by Peter Gillispie, B.A.Sc., of the University of Toronto. C. V. Mosby Co., St. Louis, Mo., 1922. Price \$7.50.

In the preface the author states that 2 per cent of the revenue of the Province of Ontario and also of the City of Toronto is expended for the purposes of public health, and quotes the motto of the New York State Department of Health. "Public health is purchasable; within natural limitations any community can determine its own death rate," and points out the

co-operative activity of the various units essential to the best results.

The first chapter is devoted to the aim and problems involved and how organization may be effected, the relation of the trained laboratory worker, the physician in general practice and the specialist. Tables are presented of the causes of death from different points of view.

Twelve chapters are given to the various questions relating to different forms of infectious diseases where prevention and immunizing measures have a more or less controlling influence. The first disease considered is diphtheria and it is shown that notwithstanding our knowledge of the cause and prevention, from 1 to 1.5 per cent of all deaths and 3 per cent of the total mortality of ages under fifteen years, is from this disease. Following are questions of antitoxin, immunization, carriers, etc. Questions relating to insect-bearing diseases, as malaria, are presented. A long list of infectious diseases are considered.

Chapter thirteen considers water and water supply, and Chapters fourteen, fifteen, sixteen by H. M. Lancaster, B.A.Sc.

Chapter seventeen relates to Domestic and Community Sanitation and House Plumbing, by Peter Gillispie, C. E., including other allied matters presented in a rather detailed manner.

Chapter eighteen considers questions relating to Maternal and Infant Mortality. Chapter nineteen takes up School Hygiene, and Chapter twenty Public Health Clinics. The last three chapters are presented by Professor Fitzgerald. Air and Ventilation, by H. M. Lancaster, B.A.Sc., in Chapter twenty-one. Industrial Hygiene are presented in Chapter twenty-two, by Dr. J. G. Cunningham and Dr. R. M. Hutton. Demography and Vital Statistics in Chapter twenty-three, including Public Health, Organization, Administration and Legislation, Chapter twenty-four, by Prof. Fitzgerald.

The book closes with an Appendix relating to various health regulations by Drs. Cunningham and Hutton.

This book of 826 pages, contains a vast amount of material relating to preventive medicine, not for the professional hygienist alone, but for the practicing physician as well. The modern physician will find in this book much of interest and importance in relation to this feature of medical and social science.

CLINICAL LABORATORY METHODS

By Russell Landram Haden, M.A., M.D., Associate Professor of Medicine, University of Kansas. Formerly Director of Laboratories, Henry Ford Hospital, Detroit. Cloth, Price, \$3.75; 294 Pages with 69 Illustrations and 5 Color Plates. St. Louis, C. V. Mosby Company, 1923.

This is a simple, accurate and up-to-date volume of laboratory methods. The text is concise and is

well written. All of the illustrations are good and many of them are original. The book should be especially useful to beginners in laboratory work and to the practitioner who does his own laboratory tests.

D. J. Glomset.

ANNUAL REPORT OF SURGEON GENERAL OF THE PUBLIC HEALTH SERVICE

For the Fiscal Year Year 1922. Government Printing Office, Washington, D. C.

This volume of 329 pages reviews the activities of the Public Health Service for 1922. A great number of health questions are considered, by states, and particularly border states and tropical countries with which we have trade relations.

On account of the wide range of health work, the references are brief, but will generally furnish the information desired.

A MANUAL OF DISEASES OF THE NOSE AND THROAT

By Cornelius G. Coakley, A.M., M.D., F.A.C.S., Professor of Laryngology and Otology, College of Physicians and Surgeons, Columbia University; Attending Surgeon, Bellevue Hospital, in Charge of Laryngological and Otological Service; Consulting Laryngologist and Otologist to the Presbyterian Hospital. 12 mo, 664 Pages with 145 Engravings and 7 Colored Plates, New 6 Edition, Cloth, \$4.25, Net. Lea and Febiger, 1922.

The purpose of this excellent work is to provide a compact manual answering the need of both students and practitioners. For pure clinical value it equals texts twice its size. In this edition, many changes and additions have been made. It contains an entire new chapter upon "Diseases of the Vestibule" and additional articles upon Sinusitis in children, a subject neglected in some text-books, Vincent's Angina, Parapharyngeal Abscess and the direct examination of the upper air and food passages. The special chapter devoted to Therapeutics has been revised to present the newer remedies and the improved application of the older ones. There are a number of useful prescriptions, together with indications for their employment. References to these additional remedies have been indicated by heavier type in the index, a feature adding to the book's value.

A number of additional illustrations have been supplied and many of the old pictures have been replaced by better ones. There are a number of pictures of instruments of the author's design. Considerable space is taken up in describing surgical procedure, especially the author's technique. This is the only adverse criticism to make on this excellent work. It is universally recognized that correct technique can only be taught in the operating room.

This manual is highly recommended to all who are interested in nose and throat work.—E. P. Weih.

NEW AND NON-OFFICIAL REMEDIES

During March, the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion in New and Non-official Remedies:

Abbott Laboratories.
Sulpharsphenamine—Abbott.
Borcherdt Malt Extract Co.
Borcherdt's Cod Liver Oil and Iron Iodide.
E. R. Squibb & Sons.
Sulpharsphenamine—Squibb.
Non-proprietary Article.
Sulpharsphenamine.

During April the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion in New and Non-official Remedies:

Abbott Laboratories:
Neutral Acriflavine—Abbott—
Tablets Neutral Acriflavine—Abbott, 0.03 Gm.
($\frac{1}{2}$ Gr.)
Enteric Coated Tablets Neutral Acriflavine—
Abbott 0.03 Gm. ($\frac{1}{2}$ Gr.)
Hynson, Westcott & Dunning:
Phenoltetrachlorophthalein—H. W. & D.
Ampules Phenoltetrachlorophthalein—H. W. & D.
Mallinckrodt Chemical Works:
Carbon Tetrachloride Medicinal—M. C. W.
Merck & Co.:
Skiabaryt (for Rectal Use)—Merck.
Skiabaryt (for Oral Use)—Merck.
Powers-Weightman-Rosengarten Co.:
Carbon Tetrachlorid C. P.—P. W. R.
Non-proprietary Articles:
Neutral Acriflavine.
Carbon Tetrachloride Medicinal.

During May, the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion in New and Non-official Remedies:

Connaught Antitoxin Laboratories:
Insulin—Toronto.
Insulin—Toronto—5 c.c. vials, 5 units in each cubic centimeter.
Insulin—Toronto—5 c.c. vials, 10 units in each cubic centimeter.
Mallinckrodt Chemical Works:
Arsphenamine—Mallinckrodt—
Arsphenamine — Mallinckrodt Ampoules, 0.1 Gm.
Arsphenamine — Mallinckrodt Ampoules, 0.2 Gm.
Arsphenamine — Mallinckrodt Ampoules, 0.3 Gm.
Arsphenamine — Mallinckrodt Ampoules, 0.4 Gm.
Arsphenamine — Mallinckrodt Ampoules, 0.5 Gm.
Arsphenamine — Mallinckrodt Ampoules, 0.6 Gm.

Arsphenamine — Mallinckrodt Ampoules, 1.0 Gm.

Barbital—M. C. W.
Cincophen—M. C. W.
Mercuric Cyanide—M. C. W.
Quinine Ethylcarbonate—M. C. W.
Parke, Davis & Co.
Parke, Davis & Co.:
Pollen Extract Ragweed—P. D. & Co.
Pollen Extract Timothy—P. D. & Co.
Non-proprietary Article:
Insulin.

PROPAGANDA FOR REFORM

Tincture No. 111 Digitalis—P. D. & Co.: A fat-free tincture of digitalis which, standardized by the minimum lethal dose frog heart method of Houghton, is 50 per cent stronger than tincture of digitalis—U. S. P. The actions and uses of tincture No. 111 digitalis—P. D. & Co. are the same as those of tincture of digitalis. It was introduced at a time when the "fat" of digitalis was believed to cause gastric disturbances. This claim of superiority is not tenable and the preparation is sold simply as a standardized tincture of digitalis. To minimize deterioration through light and air, the preparation is marketed in one ounce amber vials and saturated with carbon dioxide. Parke, Davis & Co., Detroit, Michigan (Journal A. M. A., April 7, 1923, p. 1003).

Borcherdt's Malt, Cod Liver Oil and Iron Iodide: Each 100 c.c. contains ferrous iodide 0.88 gm. (4 grains per fluid ounce), cod liver oil, 25 c.c. and Borcherdt's malt extract (plain) 75 c.c. Borcherdt's Malt Extract Co., Chicago. (Jour. A. M. A., April 21, 1923, p. 1143.)

Carbon Tetrachloride Medicinal: Carbon Tetrachloride has narcotic and anesthetic properties somewhat similar to those of chloroform. It has recently come into use as a vermifuge in the treatment of hookworm disease. It also removes some intestinal parasites other than the hookworm. It is reported that usually about 95 per cent of the hookworms are removed by the first dose. Its use appears to be relatively safe, but serious symptoms and even death have been reported. It is administered in water, milk or gelatin capsules on an empty stomach, followed by a purgative dose of magnesium sulphate.

The dose is from 2 c.c. to 3 c.c. (30 to 45 minims) for adults. Carbon tetrachloride is a heavy liquid, having an odor somewhat like that of chloroform. It is almost tasteless and almost insoluble in water.

Carbon Tetrachloride Medicinal—M. C. W.: A brand of Carbon Tetrachloride Medicinal—N. N. R. Mallinckrodt Chemical Works, St. Louis.

Carbon Tetrachloride C. P.—P. W. R.: A brand of Carbon Tetrachloride Medicinal—N. N. R. Powers-Weightman-Rosengarten Co., Philadelphia. (Jour. A. M. A., April 21, 1923, p. 1143.)

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DES MOINES, IOWA, AUGUST 15, 1923

No. 8

THE TREATMENT OF DIABETES WITH INSULIN*

EDWIN B. WINNETT, M.D., Des Moines

Twenty years ago, the treatment for diabetes consisted wholly in the elimination of the carbohydrates from the diet, no attention being given to the fats and proteins. As a result of this diet the patients, in whom the disease progressed, died in coma.

Dr. Frederick M. Allen demonstrated the fact that food restriction could be carried out without danger—the patient live, feel better and maintain a normal blood sugar and urine, provided the carbohydrates, proteins and fats were properly regulated. To many diabetics, however, this food restriction resulted in undernourishment and emaciation. More recently, Dr. Woodyatt has elaborated a food formula the use of which will, in most cases, control the acidosis.

Dr. Banting and Dr. Best have isolated the islander extract from the pancreas—the use of which has opened up a new era in the treatment of diabetes. The use of insulin affords an easier and safer way to maintain the correct aim and idea in treating diabetes, namely; a normal urine; a normal blood sugar; a weight indicative of neither undernourishment nor overnourishment; a sense of well-being in the patient and a degree of strength sufficient to carry on some useful occupation in life.

Insulin in itself is not a cure for diabetes. It must be given with a properly regulated diet to secure for the patient the best results obtainable. The wild rumors disseminated that insulin cures diabetes, that it allows the patient anything he wants to eat at any time and that all there is to the treatment is to take the injection of insulin and go to a banquet, are erroneous. In fact, it is cruel to the diabetic to arouse in him false hopes—hopes that are not true or ever can be true so far as our present knowledge is concerned. This is well illustrated by a diabetic girl, twelve years

of age, brought to the hospital in coma, given insulin (Lilly). As soon as she regained consciousness, asked for candy as she had been told, if she would take the hyperdermic, she could eat candy again. The expression of Dr. Joslin that diabetes is subdued but as yet not conquered, is very true.

Insulin must be taken hyperdermically and it must be taken before meals in most cases; the patient must be in a hospital or under the supervision of a competent diabetic nurse in the home until the dose is established for the individual case; in other words, until the amount of insulin required to burn the excess available carbohydrate over and above the portion burned by the islander cells secretion not damaged in the pancreas.

There is no routine procedure to follow as the amount of pancreatic destruction is different in patients. The dose of insulin depends upon the severity of the diabetes; the age of the patient; the weight of the patient; the activity of the patient and the complication that may, or may not, be present. A diabetes complicated with an infectious disease, either acute or chronic, requires more insulin than the uncomplicated diabetes. The average length of time for hospital treatment is about three weeks. This gives the patient time to learn his diabetic arithmetic; how to weigh and prepare the diet; how to administer the insulin and what to do when out of insulin. The patient can be instructed during this time as to the preparation of a diet containing all the common foods. Patients do not tire of a diet that contains a wide range of food. The printed lists made out at the hospital become very irksome to many patients.

Insulin is given in dosage of units: a unit is one-third of the amount required to lower the blood sugar of a rabbit weighing one kilogram to 0.045 per cent at which point convulsions usually occur. Insulin (Lilly) or Iletin comes as an aqueous solution in three different strengths: H-20, containing 20 units to a c.c. of the solution; H-10, containing 10 units to the c.c., and H-5, containing 5 units to the c.c. of the solution.

*Read at meeting of Polk County Medical Society, March 27, 1923.

If too much insulin is given, or if it is given too long before a meal, or, if for any reason the patient does not absorb the available carbohydrate in the meal taken, a chain of symptoms occurs, namely, weakness, nervousness, sweating, then unconsciousness with slow pulse and respiration. Other patients taking insulin in sufficient quantities to produce a hypoglycemia complain of a severe headache, nausea, an extreme hunger, and a stage of unconsciousness occurs without the sweating and nervousness. All of these symptoms of a hypoglycemia may be quickly overcome by feeding the patient carbohydrate, either in the form of orange juice or sugar, one to four teaspoonsful. It may be necessary to inject a 10 per cent solution of glucose into the vein. The patient recovers more rapidly if an injection of 5 or 10 minims of adrenalin, 1 to 1000, is given subcutaneously.

It is well when undertaking to treat diabetes, either with insulin or without it; first, to take a complete history of the case; second, a thorough physical examination as most diabetics have one or more complications; third, a full and complete laboratory examination, the last must be in order to serve as a control in estimating the amount of insulin to be used. The patients are weighed daily; the skin is kept active; the temperature, pulse and respiration are recorded t. i. d.; all voided urine is measured and examined, for per cent of sugar, acetone and diacetic acid, daily. The tray is served three times a day to the adult diabetic. If insulin is given three times a day, the food is divided into three equal portions. If insulin is given only twice a day, more food is given at the morning and the evening meal. After the amount of insulin required to maintain a stationary weight at a trifle below normal is established, the patient is instructed in diabetic arithmetic so that he may be able to work out the diet for himself. He should estimate the diet for his own tray, measure and weigh the diet, and examine the urine before he is allowed to be discharged from the hospital. Patients are also taught how to sterilize a needle and syringe; measure the dose of insulin in units; sterilize the skin and allowed to give the hypodermic to themselves. This procedure may be taught to some other member of the family in case the patient is very young or very old. After leaving the hospital, the patient should report to the family physician at regular intervals. If, for any reason, the patient is out of a supply of insulin, the fat should be entirely omitted from the diet, one-third the amount of protein and one-half the amount of carbohydrate should be eaten. This might not be

absolutely necessary but an experience of mine with a patient who was taking carbohydrate 50 gm., protein 50 gm. and fats 150 gm. daily, and using 10 units of insulin before meals will show the importance of such a diet. The patient was out of insulin for two days at the end of which time she went into a deep coma requiring the use of 175 units in twelve hours to bring about consciousness. This experience has taught me to impress upon diabetics taking insulin the importance of following the above regime when out of the drug.

The Treatment of Diabetic Coma—Insulin seems to be almost a specific in coma. I have used it in five cases, three of which were in deep coma, the other two, in a condition bordering on the deep stage. All of these patients recovered. If the patient can be aroused enough to swallow, orange juice should be given by the mouth the same as in pre-insulin days; if the patient is unable to swallow, glucose should be injected into the vein; insulin should be given at short intervals either subcutaneously or intravenously. The patient should be watched carefully for signs of hypoglycemia. The effect of the extract in coma is very spectacular—patients who are laboring for breath, who are unconscious, with death seemingly near, revive and in a few hours recognize friends and relatives.

Report of Cases—The following case reports show the effect of insulin in coma:

Case 1. School boy, American, aged fourteen, duration of diabetes, three years. Previous diet: carbohydrates, 45 gm.; protein, 46 gm.; fats, 80 gm. February 14, 1923, influenza, the prevailing type, developed. He did not go to bed but was up and about until February 17; when the family called him in the morning, no response was received, he was breathing rapidly, could be aroused and forced to take fluids with difficulty. I saw him for the first time February 17 at 11 a. m. Insulin was given in doses of 10 units every two hours for ten hours; then 40 units were given at one dose; then 10 units, every three hours. The patient was in coma forty-eight hours. Five months from date, his diet is: carbohydrates, 200 gm.; protein, 75 gm.; fats, 275 gm. He has a normal blood sugar, is gaining in weight and strength, and drove a car seventy-five miles to Des Moines without tiring.

Case 2. Housewife, American, aged twenty-eight, was found in deep coma May 27, 1923. She could not be aroused; respirations were rapid, the radial pulse could not be felt, extremities cold. The picture was that of impending death. One hundred seventy-five units were given subcutaneously and intravenously covering a period of nine hours when the patient became conscious. She is now taking insulin, 25 units, before meals; diet is: carbohydrates,

60 gm.; proteins, 55 gm.; fats, 150 gms., daily. She feels well and is up and about the hospital.

Case 3. School girl, American, aged thirteen, duration of diabetes, one year. She was brought to the hospital June 4, 1923, in coma. She was given insulin, 10 units, subcutaneously, orange juice, 30 c.c. every two hours from 7:00 p. m. until 7:00 a. m. She regained consciousness, asked for food and said she would enjoy going to a movie.

The following case reports will give some idea of the action of insulin in other patients:

Case 1. A man, American, aged sixty-seven; gangrene both great toes; weight 169; diet: carbohydrates, 25 gm.; protein, 65 gm.; fats, 165 gm. Insulin was given in dosage of 6 units before meals, prompt healing; final diet: carbohydrates, 75 gm., protein, 65 gm.; fats, 200 gm.; insulin 15 units before breakfast and 12 units before supper.

Case 2. Male, bank teller, aged twenty-nine; duration of diabetes, four years: Previous diet: carbohydrates, 15 gm.; proteins, 65 gm.; fats, 100 gm. Diet after insulin treatment: carbohydrates, 55 gm.; proteins, 70 gm.; fats, 200 gm. Insulin, final dose, 10 units before the morning and evening meal. He maintains a normal urine and blood sugar and has gained thirty-five pounds in weight.

Case 3. House wife, American, aged twenty-five; duration of diabetes, three years. Previous diet: carbohydrates, 5 gm.; proteins, 40 gm.; fats, 150 gm. Insulin treatment for four months; diet now: carbohydrates, 50 gm.; proteins, 70 gm.; fats, 185 gm. Insulin is now given in 10 unit doses before meals. She is now doing her housework and is feeling well.

Case 4. Male, American, automobile salesman, aged twenty-six; duration of diabetes, five years. Previous diet: carbohydrates, 25 gm.; proteins, 55 gm.; fats, 100 gm. Developed an arthritis and was unable to work. Diet after insulin treatment: carbohydrates, 50 gm.; proteins, 60 gm.; fats, 200 gm. Complete recovery from arthritis, gaining in weight and feeling well.

Three patients with diabetes and pneumonia have been treated with insulin; complete recoveries.

Two cases of juvenile diabetes have been treated:

Marjorie D., sixteen months old; duration of diabetes, two months. She had been on a guessed diet, was losing weight rapidly; was so weak that she could not stand alone. Urine examination on entrance to the hospital: sp. gr. 1040; sugar, 5 per cent; acetone plus; diacetic acid plus. The patient left the hospital at the end of the third week—urine normal in every way. Diet: carbohydrates, 50 gm.; proteins, 35 gm.; fats, 80 gm., daily. Insulin 6 units three times a day before meals. The mother reports that the baby looks and acts well, is gaining in weight, the urine is normal.

The second case of diabetes in a baby, was a boy

fourteen months old. When admitted to the hospital, coma was developing with acetone and diacetic acid in the urine, sugar 6 per cent. His diet on leaving the hospital was: carbohydrates, 30 gm.; proteins, 24 gm.; fats, 55 gm. Insulin was given in doses of 6 units, before meals, three times a day. The patient is doing well, sugar free, urine normal.

Insulin is not adaptable to every case of diabetes. Many cases are so mild that they carry a normal blood sugar and a normal urine by curtailing the diet slightly. If we study the pathology, however, we must know that all cases need treatment, whether mild, moderate, or severe. To overwork an already weakened organ as the pancreas is weakened in a diabetic produces a death of the islander cell.

A patient has diabetes in a mild or severe type in so far as he has islander cells in his pancreas killed or overworked, whether it be by an infection or a degeneration. To give insulin and at the same time to allow the patient to overwork the remaining islander cells in the pancreas, as evidenced by a blood sugar above normal and a glycosuria, seems to me to be as wrong as not to use the insulin and allow the patient to show sugar in the urine.

Insulin is one of the advances of modern medicine. Dr. Banting and his associates deserve great credit for the work they are doing. Many diabetics throughout the world will owe their lives to this wonderful discovery.

PUBLIC HEALTH LEGISLATION—THE NEEDS OF THE STATE*

RODNEY P. FAGEN, M.D., Des Moines
Secretary Iowa State Board of Health

It has been well said that to prevent disease is like increasing your store-house of wealth. In other words it is practical economy worked out in a practical way.

In viewing this subject one is asked what is life without health, and what is any community worth whose conditions are such that its inhabitants are not well and able to produce their sustenance, for to be a consumer and not a producer is to become a public charge; and any state that expends money in order that its inhabitants may be kept well and prosperous, produces conditions that increase longevity, happiness and prosperity.

It is estimated by public health officials of the United States and statisticians that 42.3 per cent of existing illnesses are preventable, and that the economic gain which would result from the pre-

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vention of such diseases would exceed one billion dollars each year.

It is noted in Iowa that twelve diseases which are preventable, accounted for 65 per cent, or nearly two-thirds of the total number of deaths in the state during the year 1922. Pneumonia, which takes the largest toll accounts for nearly 10 per cent of all deaths, and it is worthy of note that it is a communicable disease.

Legislation plays an important part in promoting conditions for the safeguarding and the protection of a person's health.

It is hardly necessary to build up imaginary conditions to portray to an intelligent people, like those in our state, that Iowa is now in a condition to go forward rapidly in public health work. To go backward is folly and extremely non-progressive, therefore, we must go forward or else become obvious to our own personal needs.

Your state board of health at the present time has appropriations as follows:

Board of health (proper).....	\$10,000
Venereal disease control.....	25,000
Laboratories	15,000
Vital statistics.....	10,000
Antitoxin	2,000

We have connected with the state board of health, fee producing departments as follows:

- Medical examiners.
- Nurses
- Embalmers
- Optometrists
- Podiatrists
- Maternity hospitals

The money derived from the fees collected in these departments, total approximately \$20,000 biennially and is turned over to the state treasurer to be credited either to the school fund or the general revenue fund of the state.

I have prepared a bill providing that the residue of these funds created by these fees, be available for public health research work, instead of turning the same over to the state treasurer to be applied to some other enterprise.

A peculiar situation exists in this state, which may be due to the fact that it is an agricultural state, and that it, our third largest state appropriation goes to animal health, and the state board of health appropriation, is one of the smallest, and is for human health. Iowa ranks thirty-ninth as to money spent for public health work.

We have before the legislature several important measures which affect the work of preventive medicine, a few of which I will comment upon at this time.

S. F. 317, by Dutcher and H. F. 340 by Doolittle, Maternity and Child Hygiene, are the bills making provision for the acceptance of federal aid for the establishing of a maternity and child hygiene department in Iowa, as provided for in the Shepard-Towner law passed by Congress.

When we take into consideration that nearly 3000 babies died in Iowa in the year 1922 before they were one year old, (exact number 2920) and there were 256 mothers died from puerperal infection, there can not be too much work and attention given to maternity and child hygiene, hence every effort possible is being put forth to obtain a state appropriation which will put Iowa in a position to receive the money made available by the Shepard-Towner law.

It has been necessary to try to obtain specific legislation in H. F. 395 by Berry requiring wash houses at mines, for in the past such sanitary conditions have been regulated in so far as possible by rules and regulations and the state board of health.

The legislature has recognized the conscientious work and efforts put forth by Dr. Wilbur S. Conkling for the state, in venereal disease control, by renewing the annual appropriation of \$25,000, which makes available the work that has become a recognized important factor in preventive medicine. We have at the present time fourteen venereal disease clinics in the state.

I desire to comment at this time upon an editorial that appeared in the Iowa State Medical Society Journal, March, 1923, edition, regarding pet notions relating to decline in tuberculosis.

The medical profession is just awaking to its opportunities in preventive medicine. It has heretofore held back on the assumption that if it took the initiative in opposing legislation that encouraged the progress of would-be practitioners of the healing art, the public would be lead to believe that the profession at large were jealous.

The reason that non-official health organizations and agencies have been accomplishing much in their efforts is that they have taken the public into their confidence and have ignored the mistaken policy of aloofness which has always been maintained by the medical profession. In other words they have taken advantage of our mistakes. We have to depend upon the laymen for assistance in stimulating public interest in raising funds to combat disease. Of course we appreciate that any public activity of the doctor, is construed as self-advertising, and in consequence tends to create a barrier between the doctor and the public.

The medical profession should not criticize the

achievements of the members of our non-official organizations, which are co-operating with our official state and local health departments, and I am of the opinion that the movement by the medical profession to take the public into its confidence as exemplified by the new A. M. A. publication, "Hygiene," will be reflected by more prompt cooperation in obtaining the enactment of legislation necessary for the welfare of the city, state or nation. I need not comment on the fact that the medical profession first realizes that the prevention of disease is as much credit to the profession as is the successful treatment, and the charges that we have to meet when trying to obtain legislation, preferred by the uninformed, that a medical "trust" exists, would fall flat if the public had more information concerning the broader program of disease prevention.

I sometimes think that the drugless healers are even to be complimented in their effort to obtain the confidence of the laymen, in their trying through legislation which is now pending before our present session, to raise their standards of qualification, and I might say that the chairman of the health committee in the house of representatives, Hon. Frank W. Elliott, who is a member of the chiropractic school at Davenport, has supported every public health measure pending.

I wish to refer particularly to the efforts that are being put forth by our Iowa Tuberculosis Association. First, we appreciate they raise funds which are used for the purpose of educating the public to assist in combatting a communicable disease, and when we take into consideration some of the factors that are responsible for the decrease in the death rate for tuberculosis, we realize that anything increasing the resistance of the non-infected, tuberculous infected, and diseased, and education regarding the care of the diseased by isolation, guarded contact and care of discharges, sputum, etc., we know that education in public health is education along lines of preventive medicine, which is applicable not only to tuberculosis but to all contagious diseases.

We also know that factors that are responsible for decrease, are better economic conditions leading to: better housing; food and more varied diet; sanitation; ventilation; facilities for getting benefits from sunlight and rest; special measures to prevent bovine T. B. (safe milk supply); establishment of T. B. sanatoria; notification of the disease by better reporting; examination of children, hence discovery of incipients, which are methods of education along the lines of general preventive medicine, and which we feel the need of. The Iowa State Tuberculosis Society is

working with the official agencies not only by giving close cooperation, but have paid Miss Drake's salary while she has been acting head or director of public health nursing, and has been engaged in coordinating the work of approximately three hundred public health nurses now distributed throughout the state.

The medical men through their official publications and otherwise should encourage the work of such agencies.

I feel that the state board of health, which is the official representative agency of our profession has not advanced in its work and efforts, for the reason that the members of our profession who are in a position to devote their interests to public welfare work, have, through neglect, failed to take a stand publicly, possibly for reasons heretofore mentioned, and I believe when a physician fails to do this, he is injuring himself personally as well as the entire medical profession. At any rate if we cannot be aggressive, we should accept the efforts of cooperation of other agencies whose membership is made up of professional men as well as laymen, and when I refer to what has been printed in our state medical journal, I wish to state that I am also opposed to it for the reason that our lack of progress in public health work will bring about some form of state, preventive medicine, by legislative enactment promulgated by the general public for its own protection, such as it forecasted in our present assembly divorcing the restaurant and hotel inspection work away from the state board of health and placing same with and under the supervision of the secretary of the state board of agriculture, this measure has been advised in order to combine inspecting departments without knowledge of their functioning.

There were 1066 deaths from tuberculosis (all forms) in Iowa during the year 1922; 917 from tuberculosis of the lungs. The total number of reports made by attending physicians of cases diagnosed, were twenty-five for the entire year. This fact alone goes to show that more interest can be shown by the doctors in preventive medicine, and if any of us are one of the physicians in the state who give the entire medical profession a black eye by not reporting all of his cases of communicable diseases, we are injuring ourselves individually as well as the entire profession in the eyes and minds of the laymen.

Another phase of public health work that is coming to the front and should require the attention and support of the medical men is legislation to make provision for full-time local health units so that our communities may receive the

full benefits of organized local health departments with a competent well trained full-time health officer at the head. This particularly applies to counties and communities that have a large rural population.

The membership of this county medical society should think beyond the boundaries of your immediate community, and give thought to some of the universal questions, which may be applied to any community in the state.

Some of the questions in health work which are nationally prominent in this day are:

1. Has your community an efficient health department—medical inspection of schools in order to determine the existence of defects which interfere with the child's progress at school or may later interfere with its ability to gain a livelihood and hence result in the individual becoming a county charge?

2. Are persons who handle food given a thorough medical examination to ascertain whether they are free from communicable disease?

3. Are all cases of contagious diseases being reported to the local health authorities—the prompt reporting of communicable diseases since only with the knowledge of when, where and under what conditions cases of disease are occurring, can the health department utilize its forces to control disease?

4. Are cases of communicable diseases in a community being isolated and quarantined in accordance with the regulations of the health department?

5. Are proper instructions being given to families where a case of communicable disease exists, in hygiene and prophylactic measures, to prevent the further spread of the disease in the home and the community?

These are all questions that every physician should keep in mind and take the initiative in promoting, so that such work would not, through necessity, have to be adopted and sponsored by others.

The responsibility for health conditions in our state is ours, and the amount of protection in any community is largely determined by the desire of its people for adequate health protection, and the demands for increased activities along public health lines have become so great and are increasing to such an extent, that it is important that all official and non-official agencies doing public health work not only cooperate, but correlate their ideas and activities in order even greater results be accomplished.

In each community we have our local board of health and official and non-official health agen-

cies. The state board of health transmits through these organizations, practical conclusions to each person in the community, which gives to the public an understanding as to the facilities in the state, and their legal and common responsibilities in the prevention of disease. In the development of the public health campaign in Iowa in the future, it is obvious that many different experts of distinct training will have to contribute their special resources to the task. There must be at least the following seven types of highly qualified persons in this field, viz., the physician, the nurse, the bacteriologist, the epidemiologist, the engineer, the statistician and the social worker, who will transmit their knowledge to the individuals of the community so that they will give their active support to the principles of health administration and necessarily legislation.

In concluding I wish to call your attention to the fact that Iowa has recently been admitted to the registration area of the United States for mortality statistics. This means that our statistics will be accepted by the nation as being correct, and among the many advantages to the state's status in the United States registration area, we can point with correctness to our official figures of the relative healthfulness of our commonwealth.

In signing these death certificates and certifying to the cause of death, we should take particular pains in giving full information, for the reason that Chapter 222, Acts of the 39th G. A., provides that a death certificate properly executed, shall be accepted as *prima facie* evidence in all courts of justice and other places.

In the past the state board of health has been issuing over 2,000 permits a year to disinter bodies. A large percentage of the disinterments were to be made to furnish evidence in civil suits, or settlements of indemnities. While we have a statute providing that a death certificate, which was properly executed at the time of death, shall be accepted as evidence in all courts and other places, there is very seldom need to disinter to hold post-mortem examinations. For this reason, we should support H. F. 425, which provides statutory authority for disinterring of the human dead, and strengthens our present statute defining the legality of death certificates.

As regards births, the U. S. Census Bureau will soon begin a federal checking of our birth records, as classified in the state board of health office, for the entire state of Iowa, to ascertain whether we have the required percentage of births recorded, to be admitted into the registration area of the U. S. for births.

I merely mention this, to recall the fact that we have a legal as well as a moral responsibility in promptly reporting births.

Finally, the files in the state board of health office are crowded with valuable information which will furnish the foundation for public health research work, and on behalf of the state board of health I invite every member of this society to call upon our office for statistics and information.

POST-OPERATIVE COMFORT IN TONSIL CASES*

G. F. HARKNESS, M.D., AND J. E. ROCK, M.D.,
both of Davenport

Much work, study, and no little oratory, have been devoted to the tonsil in its anatomy, histology, and pathology. Many instruments have been devised to encompass the entire removal of the organ. These have been perfected with the idea of speed, thoroughness, and lessening of pain, and a few have characteristics that are said to make the operation almost bloodless, while others are fashioned to protect the tissues from any undue injury. Anesthesia is perfected so that with ether or gas the patient feels no pain during the operation and only in rare instances does a proper injection of novocain leave any sensitiveness as far as the patients are concerned. All this is very well and is greatly appreciated by the patients, but what have we accomplished from here on in regard to our patient's comfort?

No one, except a person who has gone through a tonsillectomy, realizes what pain and discomfort follows the first several days after the operation. In many cases the real soreness does not come until the second or third day, and it is well known that an occasional patient, having adults in mind, as children rarely have any difficulty, never experiences a twinge of pain. It is this fact that makes one review the operation and technique in such cases, to try and determine if he has done anything different in this particular case, which might have been responsible for the pleasing result. Now, since the very great majority of tonsil patients have considerable post-operative discomfort, regardless of the anesthetic, technique, or operation, it behooves us to look for some method of lessening the discomfort that these people go through for a week or ten days,

and sometimes longer, because with the present day operative ability, the actual time consumed in removing the tonsils is very little and it seems too bad that a person must be incapacitated for nearly a week following an operation that has taken but a few moments to perform.

We are sorry that we haven't any method to offer, which will answer this question and the fact that we haven't has prompted the writing of this paper, with the idea and hope that we could find some one who has the method, or precipitate a discussion and arouse interest in the question that might bring out something, not generally known; or stimulate interest and endeavor on someone's part so that something may be brought forth to aid us in this rather serious stumbling block in an otherwise almost perfect operation.

So, with these ideas in mind, we sent out about 1700 questionnaires stating that we felt this to be the greatest obstacle we had to overcome in this operation, and asking if the men would please send us their methods of procedure both pre- and post-operative and how often and how regularly they prescribed morphine or its derivatives.

About one thousand of these were answered and it is from these that the following methods are derived, and we feel that these thousand men represent the men who are doing the best work and all they can to make their work better and more satisfactory.

Since our paper is essentially devoted to post-operative comfort, we only mention the pre- and actual operative phases in passing:

(1) Pre-operative: It is well known and generally considered good practice that a tonsil case does not get and does not require the same care that a laparotomy case does. However, it is well to bear in mind that even though it is to be a tonsil operation this patient deserves a certain amount of pre-operative care and consideration, as some facts may be disclosed, a knowledge of which would have done much toward a more comfortable convalescence. Among such possible factors are routine careful history; examination of blood for coagulation time, when indicated, and routine urinalysis. It is generally conceded that morphine gr. $\frac{1}{4}$ per hypo does much for the patient's comfort during the operation and for the first hour afterward. In going over the returns from our questionnaires, the great majority of the men reported that they routinely used this precaution. One suggestion came for the injection of codeine sulphate with the local anesthetic, with the idea of giving a patient relief from the hour's distressing pain and ner-

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vous strain that follows the return from the operating room. So much then, for the pre-operative phase, and from here we pass to the operation.

(2) This is also merely mentioned in passing and disregarding the method, there are two certain essential points, namely the anesthetic and injury to the tissue. If a general anesthetic be employed, of course there is little more to be said, except that a poorly given general anesthetic can interfere greatly with the speed and neatness of the tonsillectomy, and thus cause unnecessary injury to tissue; swallowing of blood and the resulting stormy return to consciousness and a very disagreeable few hours, vomiting and retching. If a local operation is to be done, there are two methods of injection; namely, injecting directly through the pillars and the other an attempt to follow the line of cleavage between the tonsil and the pillar. Some men in their answers are warm advocates of the attempt to follow the line of cleavage, and go as far as to say that injection directly through the anterior pillar, is responsible for a very great part of the post-operative discomfort, that we are so desirous of relieving. Be that as it may, the best way to decide this is by actually trying the two suggestions out, and adopting the one that gives the best results.

The one idea that all were agreed on, no matter whether the sharp knife dissection and cold snare method or the various guillotine instruments were used, was to avoid injury to the pillars as much as it was possible. One or two advocated suturing of the pillars, others warned against the use of sponges on the fossæ; all advocated complete hemostasis before allowing the patient to leave the operating room, and many drugs and preparations were suggested as local applications, with the express purpose of relieving post-operative pain and distress. Among the more prominent drugs were compound tincture of benzoin, iodine, ferric chloride and glycerine, turpentine, acacia emulsion, cocaine, menthol and phenol, and 1 per cent picric acid solution.

(3) Post-operative Care: Various positions in bed were recommended, the most common one being to have the patient lying down and head hanging over a pillow.

Some one hundred to one hundred and fifty recommended the routine use of morphine per hypo, others praised sprays of cocaine alone, and cocaine with phenol and menthol, others used 1-10 per cent phenol and glycerine as a gargle, while others gave codeine, and one hundred and twenty-five operators were definite in their statements that they used no opiates. Some encouraged frequent swallowing and to accomplish this

they forced fluids, while one man allows nothing by mouth for twelve hours, and another goes further and restricts food and liquid intake for thirty-six hours. It is not within the province of this paper to comment on any of these methods, and some of them need no comment.

The use of morphine, our most potent pain relief, was one of the questions we asked in our questionnaires, and the ideas of its use vary from none whatsoever, to the one answer saying "It is criminal not to use it." Nearly 150 men sent answers saying they never used morphine in tonsil cases and out of this number only one gave his reason, saying that he prefers to allow his patients to suffer the pain that aspirin, orthoform and gargles won't take care of rather than risk the resulting acid conditions and constipation that must necessarily follow the continued use of morphine.

Outstanding among the efforts to relieve the dysphagia in these cases is the semi-suspension method of Sanger. This, when properly done, by standing behind your patient; placing the extended fingers at the angles of the jaws and pulling upward and outward, while the patient swallows, relieves all the pain and will allow a person to drink a glass of water without discomfort. Dr. F. E. Hasty of Nashville, Tennessee, in the *Journal of the Southern Medical Association*, vol. xiv, pages 999-1001, December, 1921, describes a permanent hospital suspension apparatus, by which the above hand method is continuous throughout the meal and is said to allow a patient to eat and drink in comfort. However, discomfort is not confined to the swallowing at meal time alone, and the extra saliva present, following tonsil operations, necessitates very frequent swallowing and each one is accompanied by very severe pain.

As to local applications of heat and cold, by far the great majority favored the cold whether in the form of the curved ice bag, the chewing of cracked ice or eating of ice cream. Only a few recommended heat. Some advocated the use of the voice at once, while others went to the other extreme and advised against any but absolutely necessary talking.

Nearly everyone advocated some sort of gargle or irrigation, and the hot salines were most in favor, some advising their use every half hour, as gargles, and others at various intervals, in the form of irrigations. Many other combinations were suggested, such as aspirin gr. xxv in ounces iv of water, one-half hour before meals; 1-10 per cent phenol; peroxide and alum.

Local applications varied in number almost

with the number of answers, though silver nitrate in percentages varying from 6 to 50 per cent; argyrol from 8 to 20 per cent; iodine, aspirin and orthoform, seemed to be the most popular. An acacia emulsion was suggested by one man and we believe its more frequent use might be of some avail, especially if it could be put up in such a way as to make it adhere to the tissues. Equal parts of cocaine, menthol and phenol applied directly to the fossæ, had many ardent supporters.

Tablets to dissolve on the tongue, with the idea of producing analgesic effects, too were very numerous, and among the more prominent here were anesthesin, orthoform, and adalin gr. xv. One man suggests a bichloride tablet gr. 1/500 dissolved in the mouth, with the idea of making a solution of about 1/3000 with the saliva, and thus aid healing and prevent, in a large measure, infection.

The diet generally agreed on was the liquid and semi-solid at first, with special effort to encourage the patient to take plenty of liquids.

Among some of the more unusual methods of medication and treatment, were the bichloride tablets mentioned above; keep the nose well opened and thus lessen pain in swallowing; nothing by mouth for thirty-six hours; encourage rapid swallowing, and a large bolus; Dr. S. G. Brash of Portland, Maine, reports that he had good success in overcoming after pain by preserving a narrow strip of mucosa, about one quarter of an inch wide on the tonsil surface of the pillars and lastly chewing gum had a few warm devotees.

While this paper has not answered the question nor brought forth any methods which will accomplish the entire relief of post-tonsillectomy pain, we believe that it has shown that every one is striving for such a method, and also the very diversity of methods and the frequent contradictions noted, show that there really is no satisfactory method of combating this phase of the difficulty. If we can thus stimulate some interest in the question and keep the idea before us, some genius may combine some of these methods or evolve a new one which will entirely answer the purpose.

Following the ideas of H. V. Dutrou and A. G. Farmer, and the Warsaw Clinic, we believe it is a good plan to get out a printed instruction sheet, in which various warnings and facts are given the tonsil patient for his consideration during the first week after operation. In these sheets such points as rest, laxative, diet, ear ache, foul breath, hemorrhage, etc., are mentioned and discussed,

and a few words of advice and instruction are given for each of these. This makes a patient do a lot for himself and to thus avoid considerable useless worry.

CONCLUSIONS

1. Post-operative pain is our greatest problem in this operation.
2. Extreme diversity of opinion in regard to successfully meeting this issue.
3. General consensus of opinion in regard to value of care in operating so as not to injure pillars and thus do away with much of the post-operative pain.
4. Value of Morphine—This is our best method as anesthesia must be deep enough to deaden the nerve supply to the operated area, and this accounts for the success of morphine and the failure of such as menthol and cocaine, etc.
5. Efficiency of the semi-suspension method.
6. Now since we have admitted that we have no entirely satisfactory method of meeting this situation and since a search for this method prompted us to write on the subject, we have examined the returns from our questionnaires very closely and have gotten together the following rules or ideas, which for the past two months have given us the best satisfaction.

(a) Morphine gr. $\frac{1}{4}$ and atropine gr. 1/150, one-half hour before operation and repeat the morphine within the first three hours after returning from the operating room. This is repeated again about 10:00 p. m., the dose then being gr. $\frac{1}{8}$ or $\frac{1}{4}$ —an ice collar is worn most of the first twenty-four hours.

(b) Before meals and often between, a gargle of aspirin gr. xxv in ounces iv of water, urging the patient to swallow some of the solution.

(c) Semi-suspension method, when eating and drinking and urging intake of fluids by this method, throughout the day, as we feel that loss of fluids is a serious delay in convalescence after tonsillectomy.

(d) Orthoform, anesthesin and various other tablets and powders have not been satisfactory.

(e) Alkaline gargles and irrigations, preferably hot, used at least three times a day.

SUPPLEMENT

Since the above paper was written the castor oil treatment of the fossæ as briefly suggested by Dr. F. L. Love of Iowa City, Iowa, previous to the presentation of the paper and discussed at length by him just after the paper was read has been tried out very thoroughly.

His discussion relates the manner in which he came across the idea and the method of its use.

We have used his idea thoroughly since May of this year and have instructed floor nurses at the hospitals in the proper method of application and the reports gotten from the patients after having been thus treated have been very encouraging and with only a very few exceptions they have all praised the treatment, and with no exceptions, they have complained of the taste of the oil. This last fact lead us to search for some other oil equally as good, and free of the disagreeable taste and liquid petrolatum has been very satisfactory, seemingly possessing all the soothing qualities of the castor oil, and free of the disagreeable taste and odor. Along with this method of applying the oil to the fossæ directly from a saturated cotton applicator, one-half hour before meal, we have used a gargle of aspirin gr. xv to oz. iv of water every four hours, telling the patient to swallow some of the solution.

There were some few who preferred one or the other of the above method, but the great majority got the most benefit from the combination.

Since trying these methods we wish to modify the first statement in the conclusion of the original paper and say that only in rare instances do we find it necessary to resort to the use of morphia.

This oil and aspirin we feel is of considerable value to tonsil patients and we know that ours have appreciated the effort and trust other men will find it of some value.

Discussion

Dr. L. G. Howard, Council Bluffs (opening)—It would seem rather difficult, in the face of all the evidence Dr. Rock has collected, to give any new ideas for relieving discomfort in post-operative tonsillectomy cases. I think that one of the points we should consider, however, is the pre-operative treatment of the case, in order that convalescence will be shorter and the amount of pain that the patient has will be lessened. It seems to me that the pain which the patient has after the operation is not due altogether to the surface irritation of the food swallowed, because we know we have a deep pain, also a muscular pain and this is not relieved by local treatment. I believe that if we would notice carefully whether or not there is evidence of acute or sub-acute inflammation of the tonsils and surrounding tissues before operating, and would postpone operation in these cases, that the period of convalescence would be shortened and the amount of inflammation and irritation would also be decreased.

Dr. F. L. Wahrer, Marshalltown—I enjoyed the paper very much because the subject is one that is quite pertinent to all of us who are doing tonsil work. I do not think that I will be able to give you anything new, but I do want to tell you something about one or two little things that I do that I feel

have helped materially in cutting down the after pain of tonsillectomy. I speak mostly about the ones in adults. There are two reasons why tonsil patients have pain and discomfort—the pain naturally because of the operative work that has been done, and the discomfort that is present is more due to the fact that the patient experiences pain in swallowing, and for that reason they have collected in their throat and mouth a rather large amount of very sticky and disagreeable saliva and mucous. If the patient is allowed to lie on his back, this will run into the throat and cause the patient a great deal of discomfort. That can mostly be overcome by placing the patient in a position so that it will not happen and the saliva can run out easily, which can be done by holding the head over the side of the bed, or better by a pillow under one side of the head so that the mouth is down toward the bed, and they are able to let this disagreeable saliva run out instead of having to cough it out and spit it out and take the chance of retching and hemorrhage. I have always been rather opposed to the use of morphine as a reliever of pain, given two or three times for such matters as tonsillectomy. I feel that it is not a good idea except in rare cases. I have found that the administration of ten grains, or in some cases, five grains of powdered aspirin placed on the back of the tongue and allowed to stay there and form a little paste that dissolves around the base of the tongue, without giving the patient any water to swallow, seems to have a local anesthetic effect. Repeat, as a rule, in a couple of hours and your patient will go through the day and through the night with very little pain. I do not know whether any of you have tried the powdered aspirin in that form or not but I have found it very efficacious and I believe that it is worth a trial. Those people who have tried it have reported it very satisfactory. This isn't anything original with me, however. Also such things as the use of cracked ice freely, keeping the mouth clean and cool, all help. I wanted to emphasize, especially, the position of the patient so that the saliva can run out of the mouth rather than back into the throat, and the use of the powdered aspirin simply taken on a spoon or any way they wish, and just place it on the back of the tongue and let it stay there. The patient complains of no discomfort because in a few moments it is dissolved into a wet paste and stays on the back of the tongue.

Dr. F. L. Love, Iowa City—Gentlemen, this seems to be more in the form of an experience meeting than anything else. I have a little experience to give in regard to the after treatment of tonsillectomy cases for the alleviation of pain which came about by accident so to speak. I had charge of the work at Camp Dodge. Our routine after the operation was the application of an ice bag and the administration of morphine and atropin. The next morning after the operation, each and every patient was given from one to two ounces of castor oil. Immediately after our giving this castor oil treatment, in looking over the charts of the patients that had been operated on

the day before, we noticed that they had eaten breakfast and practically every one of them with very little discomfort. It then occurred to us that possibly the administration of this castor oil had something to do with the alleviation of pain and after noticing this, we made it a routine to have a patient report for treatment about from an hour to a half hour before meals, at which time we took cotton on applicators soaked with castor oil. We did not swab out the throat, but just sopped this castor oil into the fossae left from the operation, with the result that practically 95 per cent of them were able to take their ordinary semi-solid diet and liquid diet from the beginning of breakfast the next day after the operation and continuing throughout their convalescence. We had very few of them that were kept in the wards over three or four days at the outside. At the end of this time, they would be eating with comfort and seemingly relieved of the post-operative pain to a very marked degree. I have used that as a routine with patients that I have operated on since that time and I am still continuing; however, with this exception, viz: if we add to the castor oil a few drops of oil of cinnamon, it will take the curse off the castor oil. In the army we were not furnished with this so-called flavored castor oil, and as a consequence, they had the real thing. I found that with that simple procedure without the use of any opiates after the first twenty-four hours, that it has proved very satisfactory and the patients seem to speak very highly of castor oil.

Dr. F. F. Agnew, Independence—My own experience along this line is perhaps like everybody else's, an individual thing and perhaps it amounts to what there is to a personal equation. I never have given a dose of morphine after a tonsillectomy, and I don't believe I ever will, I don't believe in that at all and don't believe it is necessary. I think one of the things that accounts for many sore throats is the fact that they are operated when they are acutely inflamed or in a subsiding inflammatory condition. I do not think this should be done when it can be avoided, which can be in nearly every case. The least possible traumatism of a throat will assure the patient the most after comfort. This simply is the result of developing one's technic to the point where they will traumatize the least. I believe I can honestly say, that barring the necessity of a ligation, I have not operated a case in two years where the patients could not eat comfortably the following morning. I am sure that I can demonstrate this any time that need be, without any of the numerous suggested additions of which we frequently hear.

Dr. John E. Rock (closing)—It does not seem that there has been any particular approved method, and we have none to offer. As someone has suggested, it is best to individualize each case, and while we have used morphine, we find it the most potent pain reliever of either method. We have tried the aspirin. The castor oil treatment of Dr. Love, I forgot to mention. He wrote to me and told me about it and I surely intended to mention it in the paper.

MUSCLE RIGIDITY—ITS DIAGNOSTIC VALUE*

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Acute inflammations of the organs of the closed cavities of the body manifest themselves by a variety of symptoms, depending upon what organs or tissues are affected and the degree or acuteness of the inflammatory process—by pain, tenderness, nausea, emesis, impaired function; plus reflex signs which develop on account of the nervous impulses set in motion through the sympathetic system. There is one sign which is characteristic of this reflex action and that is increased tonicity of the correspondingly innervated skin and muscle group. It is probable that all inflammatory processes affecting the internal viscera cause reflex phenomena which are expressed on the surface of the body by means of the central communication with the motor and sensory nerves in the segments of the spinal cord. Could we determine these changes we would be possessed of a most valuable aid in the diagnosis of many of the diseased conditions in the abdomen. It is the purpose of this brief paper to call your attention to the importance of recognizing some of these conditions and the giving to them the proper place and to appreciate their value in the making of the diagnosis of the acute inflammatory processes as they occur within the abdomen.

In recognizing and appreciating the value of muscular rigidity one must have knowledge of the motor distribution and of its relationship with the sympathetic system.

All smooth muscular tissue is innervated by the sympathetic as inhibitory fibres. The parasympathetic sends fibres with some of the cranial nerves, of these only the tenth or pneumogastric reaches the abdomen. This nerve sends fibres to all the small intestine down to and including the appendix. The parasympathetics are activating fibres. Stimulation of the fibres of this nerve causes local tissue contraction or symptoms of irritation and frequently refers the symptoms to other structures having innervation from the same source.

"The visceral peritoneum is practically insensible to outside sensations—but it is exceedingly sensitive to irritative excitations from within."¹ Acute inflammations produce increased tension of the affected organ or structure on account of the toxic action of the irritant, whether it be chemical or bacterial. Increased blood supply results with greatly augmented number of leu-

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cocytes, which act as phagocytes, in addition to the products of extraneous materials. This causes edema of the smooth muscle and other tissues with a greatly increased intra-peritoneal tension, pulling and stretching the peritoneum; irritation of the sympathetic fibres and the sending of impulses to the sensory ganglia on the posterior roots of the cord. Here the impulses are speedily referred to the anterior horns and then sent out along the motor neurons to the appropriate muscle fibres.

"The reflex is the means by which tissues and organs react to their surroundings. A reflex is due to an impulse which is carried over a sensory neuron to a cell in the central nervous system, where it is transmitted either directly or through the nerve cells and their fibres to another cell which through its fibres produces a reaction. These reflexes may be simple and take place in the same segment of the cord which receives the sensory impulse, the connection being direct from the sensory to the motor neuron; or they may be complex, the acting efferent neuron being separated widely from the afferent cell body, the two being connected by several different neurons."²

"The voluntary nervous system has been studied with care in the past; but the involuntary system, which is more properly called the vegetative system, while of great importance in clinical medicine has not been developed in clinical literature."³

The organs constituting the enteral system are all supplied from the sympathetic system. The enteral system, which comprises all the organs lined with mucous membrane—all having the same embryological origin, is the intestinal tract plus the lungs, pancreas and bladder.

While it may be questioned whether the sensory fibres from the internal viscera are capable of carrying sensations such as pain, heat and cold—which are produced by stimuli with which these organs have not come in immediate contact, there is no doubt but what they carry afferent impulses to the central nervous system, the same as the sensory nerves, which result in reflex action.

The visceromotor reflex which results from the organs and other structures within the abdomen, receiving their sympathetic innervation through the solar plexus, shows itself in a contraction of the fibres of those muscles which have their motor nerve origin from this portion of the cord, and particularly from the seventh to the twelfth thoracic and the first lumbar seg-

ments. This is recognized clinically as increased tone, spasm or rigidity.

These reflex motor and sensory phenomena are expressed in those structures which are supplied by nerves which are in reflex communication with the sympathetic nerves which supply the intestines. The major splanchnic arises from the 5th, 6th, 7th, 8th and 9th thoracic ganglia, the lesser splanchnic arises from the 10th, 11th and 12th thoracic ganglia. Through these ganglia the splanchnics communicate with the corresponding segments of the cord from which arise the innervation of the internal and external obliques, the transversalis and the rectus abdominalis—coming from the seventh to the twelfth segments, and with the sensory nerves which supply the marginal part of the diaphragm, the peritoneum of the anterior abdominal wall and the skin covering the abdominal wall.

Muscle tone is maintained by combative action of the sympathetic and the parasympathetic systems. The 3rd, 7th, 9th, 10th and 11th cranial and the pelvic nerve have parasympathetic fibres.

"Ordinarily our voluntary muscles, even at rest, are in a state of slight tonus. This muscle tonus is a reflex affair—that is, it is dependent upon the integrity of the spinal reflex arc. The reflex arc, as we know, consists of an afferent limb, made up of, first, the sensory nerve leading up to the posterior spinal root, then, second, a short intermediate neuron within the grey matter of the cord, and third, an afferent limb consisting in series, of the anterior cornual cell, the anterior nerve root, the motor nerve and the muscle.

"A lesion interrupting any part of this spinal reflex arc will cause, among other phenomena, a loss of muscle tonus.

"The opposite condition of excessive reflex activity with increased muscle tonus may arise from the irritative conditions in the reflex arc. Sometimes the irritation is in the afferent limb of the arc, as can easily be observed in the localized rigidity of the inflamed appendix. It may also result from the irritative conditions in the anterior cornual cells—for example, in poisoning by strychnine or by the toxins of tetanus, although in tetanus other factors are probably concerned."⁴

"The main or outstanding cause of tonic spasm may be ascribed to any agency capable of compelling a muscle or group of muscles to assume compensatory function whereby relief is afforded to pain arising in another part. Its economic purpose is to protect instinctively an oversensitive or overstimulated structure. Tonic spasm is nearly always designed to furnish protection. This it does more or less for a time."⁵

In examining an area for muscular rigidity, the clothing should of course all be removed.

Inspection—Patient flat on the back, first with the limbs extended and then with the limbs flexed on the abdomen.

The tonicity and rigidity should be observed as their presence will give valuable information. This is due to the fact that acute inflammatory conditions are reflexly referred to the overlying skin and muscle groups.

Careful watching of the respiratory movements will reveal impaired or irregular muscular movements. An inflamed organ protects itself instinctively by suppressed muscular activity, showing a complete harmony of the motor and sensory systems. There will be an appreciable difference in the muscular movements of the impaired and the unimpaired sides. Sometimes the degree of tension is so great that it can be determined by inspection as well as by palpation. The muscles can be seen to stand out on the affected side more prominently than on the sound side.

Palpation—The muscles are examined by light palpation, any difference in tone should be noted. With as complete relaxation as is possible to obtain and the attention diverted to minimize the personal equation and voluntary efforts at muscular tension and any fear of the examination is obviated, the hand must be placed flat against the abdominal wall, not pointing at right angles to it and sticking the finger tips against the skin. The hand should be warm, otherwise skin reflexes will be stimulated. A cold examining hand will cause reflexes which will mask the true condition. It is usually the better procedure to palpate the well side first, ascertaining the condition of the normal side before the abnormal is searched for. By a process of exclusion then, the rigid and protecting muscle is approached last. The degree and the extent of the rigidity is carefully noted. If the palpation has been carefully done, it is a very easy matter to outline all the rigid muscle and locate the point of greatest tenderness. It will be found that the muscle is rigid then only over the inflamed area.

"All the organs and structures below the diaphragm are supplied by sympathetic fibres through the various plexes of the epigastric or solar plexus. This great center of nerve supply, frequently called the abdominal brain, lies behind the pancreas and in front of the aorta, encircling the coelic axis. It has associated with it a number of lesser ganglia. It receives the great, small and lesser splanchnics and filaments from the pneumogastric."⁶

In differentiating the various affected areas, I must call attention to the fact that—

Inflammations affecting the kidney which produce a stretching or irritation of the capsule or pelvis are referred through the renal plexus of the sympathetic to the sensory ganglia of the eleventh and twelfth thoracic and the first lumbar segments and by them referred along the motor pathways to and producing spasm of the lower part of the latissimus dorsi and quadratus lumborum, supplied as they are from these segments of the cord.

Acute inflammatory processes in the upper abdomen affecting the gall-bladder, duodenum, pylorus or the head of the pancreas are referred through the coelic plexus to the sensory ganglia of the seventh to the twelfth thoracic and out along the motor neurons to the upper segments of the rectus and the obliques which are immediately thrown into spasm for protection, they receiving innervation from the same cord segments.

Irritations about the head of the cecum and the appendix are referred by the superior mesenteric plexus of the sympathetic to the seventh to the twelfth thoracic and out along the motor neurons to the muscles which have the same innervation—the lower segment of the rectus and the obliques and transversalis.

Inflammatory processes on the left side of the abdomen, while not so common as on the right side, are protected by muscle spasm in the same manner. In differentiating between appendicitis and renal or ureteral stone; the pain from the calculus in the kidney will be referred to the muscles of the back, while that in the ureter, which is not covered with peritoneum except in its lower part, will cause no rigidity in the rectus muscle. Of course the history and mode of onset must not be overlooked.

For a similar reason when the appendix has perforated or is gangrenous, muscle tonus is very much diminished or entirely absent. This is accounted for by the fact that the peritoneum covering the appendix is destroyed in whole or in part and there can be no sympathetic reflex activity.

Acute distensions of the intestines with gas as occurs in fermentative indigestion and so frequently after laparotomies where there has been much handling of the gut produce intense general pain with a rigidity of all the abdominal muscles. In these instances there is not the board-like rigidity of general peritonitis neither is there any definite point of tenderness.

Slow enlargements of those organs covered in

part by the peritoneum—the liver as in hypertrophic cirrhosis; the spleen as in malarial infections or leukemia; or the stomach as in chronic dilatation, will not be accompanied by acute stretching of the peritoneum and consequently there will be no excitation of the reflexes with concomitant muscle rigidity.

Other acute abdominal conditions—Intussusception, twisted mesentery, volvulus, obstruction will produce the same reference through the solar sympathetic and will refer the motor impulses along the appropriate neurons to the overlying muscles and will cause them to contract and remain in protective spasm, and they will act as a guide to the location of the diseased process.

A chronic or continued spasm of a muscle or group of muscles means that there is some severe inflammatory disturbance in operation directly underneath that rigidity and that the spasm is to protect from injury.

Knowing that the abdominal muscles are supplied by the motor neurons arising from the anterior horns of the cord from the seventh to the twelfth segments, and that these segments are in sympathetic control with the sensory ganglia of the posterior horns, and through the solar plexus with its sub-divisions to the organs and other structures of the abdomen, it is easy to read backward from the rigid muscle to the inflamed area.

In the event of a positive preoperative diagnosis being impossible and surgical intervention urgently indicated, it is good surgery to open the abdomen through the point of greatest tension.

Chronic inflammations result in trophic changes in the related muscles and atrophy finally replaces rigidity.

CONCLUSIONS

Acute inflammatory processes involving the structures in the abdominal cavity produce tension of the peritoneum, whether from chemical or bacterial action. The painful sensations are referred by the sympathetic through the sensory ganglia to the motor neurons of the overlying muscles.

Careful, intelligent inspection will oftentimes aid in locating the inflammatory process by the rigid muscle.

Thorough, painstaking palpation will outline the diseased area and will locate the process by estimating the degree of muscle tension.

Proper interpretation of the nerve phenomena will materially assist in locating the disease condition.

A rigid muscle denotes acute inflammation.

A rigid muscle is protecting an inflamed organ.

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Discussion

Dr. P. A. Bendixen, Davenport—The subject of muscular rigidity is an important one, and its interpretation from the point of view of the origin of the stimuli is another important question. Do we or do we not appreciate true muscular rigidity? We must associate muscular rigidity with pain which is produced by a stimulus, as to where this stimulus is located is another proposition. The location of the muscular rigidity may be at a distance from the pathological site. Therefore we have two distinct forms of muscular rigidity. First: The muscular rigidity due to trauma of the muscle, and second, the rigidity which is located at a distance from the pathological condition. Dr. Boice's suggestion with reference to palpation or rough handling of the patient is of vital importance. Too many of us handle our patients too roughly, thereby bringing about a false muscular rigidity, one that has no diagnostic value. For this reason, light palpation should be adhered to. In the December, 1921, number of the *Munch Med. Wehnschr*, Dr. G. Kelling, suggests that when palpating the abdomen, the patient should be placed in an easy dorsal position and allowed to drink some water. This is done by separate swallowing acts. The swallowing reflex does away with the need for breathing for a time. This causes subsequent involuntary deep breathing which does not allow strong contractions of the chest wall. There is also a reflex reduction in the abdominal tension after filling the stomach with food or water. This reflex proceeds from the inner gastric wall through the gastric plexuses, semilunar ganglion and paths of the splanchnic, to the sympathetic nerve and from here to the spinal cord. When contractions of the abdominal wall are caused by inflammatory processes, this method does not hold good because there is no relaxation. In conclusion I wish to emphasize that muscular rigidity is an important symptom which may be caused by distant pathologic condition and transmitted by the nervous system to a definite area. When we appreciate this fact it may aid us in recognizing the true nature of the underlying pathological factor.

Dr. Boice—It is not necessary to add much to the discussion of Dr. Bendixen except to reiterate what he has said—that the important thing in determining the presence of muscular rigidity is the method of eliciting it. The man who sticks his finger in the muscle will never find any rigidity, depending on whether the patient is watching him or not. Elicitation of this symptom is accomplished by gentleness and refinement of technic. A warm gentle palpatating hand will find many things that cannot be found by any man who undertakes finger-tip palpation.

FRACTURE OF THE PATELLA*

JASPER L. AUGUSTINE, M.D., F.A.C.S., Ladora

Although the patella is located at a place where it is unprotected and often subjected to violence, its fractures in comparison with fractures of other bones, is an accident of infrequent occurrence. The injury occurs most frequently at large industrial centers and locations where physical violence is most liable to occur. It is only in large surgical clinics where most of the cases treated are old ununited fractures in which good functional results have not been obtained after primary treatment, or in hospitals connected with industrial institutions, that any number of cases are seen. In many instances a general practitioner may not be called upon to treat a case of fractured patella in a period of years, although he may have had a wide and varied practice. But it is obvious that any practitioner in any community however remote, may suddenly be called upon to treat such a case. The diagnosis of fractured patella is attended with no difficulty. Correct methods of surgical treatment are simple, easily applied, and effective. But often the general practitioner into whose hands many of these cases fall is prepared only to treat them by expectant or non-surgical methods, of which there are a number that incite hope and expectation. But none of them from the most simple figure-of-eight bandage to the more pretentious and complicated Fischer apparatus is able to furnish a dependable means of restoring the injured member, except when the fracture is of the very simple type.

When fracture of the patella has occurred there will be little difficulty in recognizing it, especially if the case is seen soon after injury has occurred. As a general rule it is not difficult to palpate, although if in addition to an extensive extravasation of blood into the joint cavity, the prepatella bursa is filled with blood or other fluid, some of the evidence may be obscured. But usually the ends of the bone fragments can be distinctly felt. Most frequently it will be found when the fracture is a transverse one, that the proximal end of the bone has been pulled up out of place by the quadriceps. The diastasis varies according to the amount of laceration of the anterior sheath of the patella and lateral portion of the aponeurosis. Sometimes a gap of more than two inches will be found to intervene between the pieces of the bone. The principal symptom apart from pain, is inability to extend the leg or raise

the heel from its bed. The only question is one of differentiation from rupture of the aponeurosis of the quadriceps extensor just above the patella, or from laceration of the patellar ligament. In either instance the patella is intact and the diastasis is at one or the other end of the patella and can be palpated. Dislocation upward with inability to extend the leg will also distinguish a torn patellar tendon from a fractured bone. Crepitation is a symptom that usually can be elicited with little difficulty when the leg is extended. An interposing clot of blood or torn pieces of periosteum or other tissue sometimes offers an obstacle to this time honored symptom of fracture being brought out. It is needless to say that when the pieces of bone are widely separated crepitation cannot be produced. A very noticeable symptom of fracture is swelling defined by the limits of the synovial membrane, due chiefly to effusion of the blood into the joint. Swelling is immediate and pronounced, rapidly increasing for several hours. The most significant symptom is inability to extend the leg. On this symptom alone can be based an adequate conception of the extent of injury to the knee joint. Often fracture of the patella is a small part of it. The local swelling and inability to extend the knee may be present in other regional injuries and are only of distinct diagnostic value when the ends of the fractured patella can be palpated. In cases that are doubtful the diagnosis can be verified by use of the x-ray.

The patella is a sesamoid bone developed in the tendon of the quadricep muscle. It is of value in the perfect operation of the knee joint, its shape, size and mobility enabling it to be used as an efficient fulcrum in extending the leg. But the patella is by no means indispensable to the function of the knee joint, its removal being attended with no dire consequences to the joint. The power of flexion and extension is retained and a very serviceable knee-joint is possible without the services of the patella. Those who ascribe a different or more important role to the patella are disturbed by the various incidents that prevent bony union between its fragments when fractured; but it was the opinion of the late John B. Murphy that suture of the capsular ligament sufficed, even in the absence of the patella, to maintain a satisfactory union between the quadriceps tendon and the patellar tendon and allow normal strength and motion to the knee-joint. This view is generally admitted today by the best authorities.

The most important factor in dealing with a fracture of the patella is to establish a firm

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union of the torn lateral aponeurosis. It will be a poor functional result if this union is not obtained. Even if there is a wide separation of the fragments of the bone, the power of extension will remain practically perfect if the lateral aponeuroses are intact.

The lateral portion of the aponeurosis is the chief factor in extension of the knee. It has a firm hold on the patella because it fuses with the periosteal covering of the patella when it reaches the edges of this bone. The deep fascia and the quadriceps extensor muscle are inserted into the patella. Prolongations from the fascia and from the quadriceps pass from the edges of the patella and are called the patella ligament. The patella therefore is bound up in this strong fibrous tissue and its restoration when fractured is a matter of less concern for the support and functioning of the knee than is the repair of the torn aponeurotic tissues. Failure to obtain bony union is of less consequence than failure to secure proper adaptation and union of the aponeurosis, especially the lateral aponeurosis. Besides, the most that we can expect is fibrous union of the patella. The bone as stated is a sesamoid one and poor in osteogenetic power.

There is usually a large effusion of blood into the joint, also there is a helplessness which accompanies a severe contusion and function of extension upon which one must depend in estimating the extent of injury to the lateral portion of the aponeurosis, will often be found to be absent for a number of days, although the injury may not involve a large amount of tearing of the lateral aponeurosis. Thus the evidence which is needed as a determining factor in treatment may be misleading at the time of injury. However, inability to extend the leg in fractured patella may be regarded with some reservation, as good evidence of an extensive tear in the lateral portion of the aponeurosis. At times there is difficulty in discovering the nature and amount of injury to the lateral aponeurosis when the joint is not exposed by open operation.

There are some cases in which injury is limited to fracture of the bone and laceration of its anterior fibrous covering with little or no injury to the lateral aponeurosis as evidenced by the patient's ability to extend the leg and a small amount of separation of the pieces of bone. Less frequently, but by no means rarely, it will be found that although the bone is broken its capsule is intact. Necessarily, there can be little displacement of bone fragments and the patient's ability to extend the leg is limited by pain only.

Whatever justification there may be for the

non-operative treatment of fractured patella is found in such cases or in remoteness of the surgeon. Methods of non-surgical treatment are defective. They do not hold the severed tissues in apposition. It is most difficult to overcome the constant contraction of the quadriceps so that separation of the fragments can be prevented. Intervening clots of blood and soft tissues are present and prevent the bone fragments from being brought into close apposition. If the fracture is a few days old before reduction is accomplished, a thick coat of fibrin usually covers the ends of the broken bone which becomes more difficult to remove the older the fracture and prevents proper coaptation. But in nearly every instance when the lateral portion of the aponeurosis has not been seriously injured, a good functional result should be obtained by any of the simple or more complicated and ingenious, non-operative methods of treatment in vogue. The number of cases in which there is a plain indication that non-surgical treatment could succeed is not large, and success by such methods is less due to the effectiveness of the treatment than to the arrangement of the decussating fibers of the lateral aponeurosis, which, when uninjured, develop and make up any deficiency that may result in the anterior mechanism of the knee joint, because of imperfect healing.

The limits under which non-operative treatment can be successfully carried out are restricted to cases in which the injury has occurred to the bone and anterior portion of the capsule only, with this reservation: that in every instance without regard to extent of injury to bone or ligaments, when it is not possible to perform a surgical operation for the repair of the injury, with perfect asepsis and good technique, a non-operative treatment is not only permissible, but imperative. When the lateral aponeurosis and contiguous tissues are severely torn, in addition to fracture of the patella, it is not probable that any method of non-operative treatment will secure a good result, but it must be remembered that the knee joint is very sensitive to infection, and any surgical operation which opens it must measure up to the best standards of surgery, or it may bring greater disaster to the patient than could an expectant method of treatment. Safety to the patient will sometimes dictate that surgical repair be made later when favorable conditions can be obtained. Often within the week after injury it is possible to transport the patient to a hospital, or make other arrangements for a suitable operation. Such a delay in operating is not detrimental to the pa-

tient. There is a growing tendency to operate within forty-eight hours, but many surgeons believe better results are obtained, and there is less danger of infection when operation is deferred from seven to ten days.

Operation can be done when all signs of cutaneous laceration are gone, when the skin is smooth and can be made surgically clean. If deferred too long, blood clots in the joint become more firmly organized and injurious adhesions form. Often these cases are not turned over to the surgeon, not because an ideal operation was impossible within suitable time limits, but because non-surgical treatment once begun inspired an unwarranted hope of success. In such cases, where the lateral portion of the aponeurosis has been torn, operation to restore the joint must be performed months later under the handicap of a complicated pathology.

When operation can be performed by a skillful experienced surgeon, under conditions that assure asepsis, there are but few cases of fractured patella which should not derive full benefits from surgery. It is only through an open incision that it is possible to discover with any degree of accuracy the extent of injury to bone and soft tissues and it is only through an open incision that accurate coaptation of bone and repair to aponeurosis can be made.

An operation that combines simplicity and effectiveness should be the one of choice. Such an operation for the repair of a fractured patella is in the scope of every experienced surgeon; it does not call for elaborate unnecessary operative accessories, nor will the surgeon be handicapped if he works without the aid of several assistants. The personal equation counts here, and the number of assistants can be reduced to the vanishing point, in an emergency, when a simple suitable operation is selected.

There are various operative procedures that are useful in restoring the continuity of fractured bone and lacerated soft tissues. The inlay bone graft method is scientific and ingenious. It is rather complicated. Its execution causes additional traumatism. It requires an equipment that is not in the hands of most surgeons. Moreover, such a graft has but little chance of nutriment in a sesamoid bone such as the patella, with poor blood supply.

Wire is employed with diminishing frequency. It is a foreign body in the tissues, often causing trouble later and must be removed. In most cases its application would produce unnecessary traumatism. But in some instances when the fascia covering the bone is attenuated, or for any reason

difficulty would be experienced in suturing the aponeurosis in a satisfactory manner so as to assure firm union, silver or bronze aluminum wire can furnish a service of apparent value. Being non-absorbable and strong, when applied closely around the lateral margins of the fragments, which can easily be done with an ordinary surgeon's needle, it furnishes a support and holds the tissues in apposition longer than absorbable sutures could, and thus possibly affords a little better opportunity for healing, when the process should be slow or difficult. Whether wire is applied through holes made in the bone, or encircles it, the wire should be reinforced by absorbable sutures, placed in such a manner as to make as strong closure of the capsule as possible, because strong union of the lacerated fibrous covering of the knee joint is of paramount importance. Under proper conditions union of the fragments is assured by firm union of the capsule. Wire can not be depended upon to give permanent strength to the fractured bone, and a wire suture however employed, will not usually achieve a better result than the ordinary absorbable suture method. In most up-to-date clinics, wire is altogether discarded, as it ultimately has to be removed.

In ordinary fractures of recent origin, most surgeons will content themselves with a very simple technique and equipment. A scalpel, a pair of scissors, some hemostats, needles and sutures is sufficient armamentarium. For a bloodless operation which is desirable, an Esmarch bandage can be used advantageously. Over preparation of the skin should be avoided, and as a cause of infection can only be equaled by rough or excessive handling of the tissues. Any incision that gives good exposure may be used. A U-shaped flap which turns down, is most easily managed. It exposes the fracture and injured tissues perfectly. All fluid and blood clots should be removed from the joint and the ends of the bone completely cleansed. As nearly as possible all sponging and handling of tissues should be done with forceps. The gloved hand should not come in contact with any injured tissues; it is quite easy for it to become contaminated by coming in contact with the patient's skin, which only can be made relatively aseptic, and thus provide a disastrous infection in the sensitive knee joint. There is a ragged fibroperiosteal fringe which hangs over the margins of the bone fragments as its rupture is usually higher than the fracture line. This periosteaponeurotic fringe, which might prevent good approximation of the bone fragments, should be carefully lifted

up but not resected, as all covering tissue will be needed to strengthen the anterior portion of the capsule. The fragments should be perfectly coapted. Mattress suture of No. 2 chromaticized catgut or Kangaroo tendon are placed at advantageous points and reinforced by a running suture at the margin of the flap, so that the tissues are well imbricated and strong union insured. The skin is closed by a subcuticular catgut suture and the operation concluded by encasing the limb from the toe to trochanter in a plaster cast which need not be disturbed for a period of three weeks, after which it is removed. The joint and attached muscles should then be massaged daily and the patient encouraged to use the injured member. Active movements are better than passive, the patient's sensations being a better guide to the amount of activation permitted than the surgeon's judgment. The patient will naturally always stop short of actual traumatism.

During the late war a great impetus was given to the early mobilization of injured and infected joints to secure efficient functioning. In many instances the results of this treatment were beneficial. In operative cases of patellar fracture, mobilization of the joint, and use of the limb can be begun much earlier than in cases of equal injury which are non-surgically treated. When the injury involves only fracture of the patella, and laceration of its anterior fibrous covering, movements may be instituted without fear of causing harm to the knee, when pain and swelling have sufficiently subsided. A good functional result may be confidently expected, since the lateral aponeurosis not being injured, may be expected to develop and compensate for any deficiency arising in extension of the leg from imperfection of the anterior part. When the lateral aponeurosis is primarily injured, more caution must be observed. If such tissues are injured by over manipulation during the massage period, then the lateral as well as the anterior aponeurosis is likely to be torn, and the whole capsule again disarranged, resulting in a loose fibrous union between the fragments of the patella and between the ends of the severed aponeurosis, on which as previously stated, extension of the knee principally depends, would be disastrous. When failure results, as it inevitably will, it can be attributed almost wholly to lack of proper union between the torn ends of the lateral aponeurosis, or rather, to the separation of the parts because too great strain was applied too early. When refracture occurs it is not so much due to lack of proper union between the fragments of the patella as to failure to get strong union between the torn ends

of the strong fibrous sheath which envelops the joint, and upon which the strength, security and efficiency of the joint depends.

Discussion

Dr. W. Whitfield Hansell, Grinnell—Fortunately for me the essayist has left very little to be said, he has handled everything from the etiology to the prognosis. In regard to treatment, I agree entirely with Dr. Augustine as to open operation in these cases. Furthermore, practically all of these cases can be referred to a surgeon, as there is plenty of time. In fact, most of us have for some time believed that the best results are obtained from five to ten days after the injury has occurred. There is no need for haste. These cases can be referred to a surgeon, and, with few exceptions, there is no excuse for closed treatment. One indication for conservative treatment is in a case where the knee can be extended; that is, where the aponeurosis probably is not torn to any great extent. In these cases bony union may not take place, but sufficient healing occurs to make a strong joint. The essayist mentioned also that the sesamoid bone of the patella is not necessary for a strong joint, and perfect results can be obtained without bony union. However, I think it is well to keep in mind that bony union would be desirable, and you can get bony union by suture of the soft tissues without suture of the bone. If you wish to suture the bone it is all right. However, it probably would be better to use absorbable suture, because it has been found that in cases in which, for instance, silver wire has been used, the wire has to be removed later because of future discomfort if left in place. As regards operative technic, it seems to me that in the cases under discussion the technic should be along the line of that followed in doing any reparative operation, as in hernia. There is no question but that a hernial operation can be done by several methods, but the main consideration is the careful handling of tissues, with clean sections and with no fat or blood clot or other material left between the clean cut surfaces. This principle applied in knee-joint surgery and other surgery would be followed by more satisfactory results.

Dr. A. P. Donahue, Davenport—A short time ago I had occasion to read a paper on this subject before the Scott County Medical Society, and the circumstance which prompted the writing of that paper was an open operation of the patella. It is the only fractured bone in the body that you can close with catgut and get away with it. Another factor is that you have to get rid of the debris between the two fragments, because the periosteum here is extremely thick, thicker than over any other bone. This point was brought out by the essayist. It has ample strength to hold the catgut stitches, but at the same time the thickness of the periosteum is what hinders healing without open operation, because the shreds of this torn tendon drop down between the two fragments of the fractured patella. Every fractured patella should be repaired by open operation. The

fracture itself is your guide as to where to go in. The results were perfect in the case referred to. We have an average of 200 cases of fracture before we get a fractured patella, so we do not have very many of these to operate on.

Dr. Peter A. Bendixen, Davenport—With reference to operation for fracture of the patella being easily done, I do not believe we should look on this operation as one which is accomplished so easily. There are two joints in the body I have a great deal of respect for and which undoubtedly give more trouble to the patient than do others when injured—the knee-joint and the shoulder-joint. The essayist did not lay stress on the use of the x-ray. I believe that the patient should be thoroughly x-rayed in order that we may know exactly what exists in the knee-joint. Another thing is that the x-ray should be used as a control after operation. The fragments should be thoroughly approximated. Approximation in these cases should be done under the most aseptic condition. The bone fragments should not be handled just the same as in any other bone operation. Elimination of foreign bodies should be emphasized. Wire should not be used unless necessary. Where the fracture is transverse you can use the Magnuson bone screws or the ivory pegs. Another point to be emphasized is that the patient should not be allowed to remain in a cast for three weeks. I believe that early passive motion should be instituted. If in the case of a patient on a straight splint you wait ten days before instituting motion, you have already gone three to four weeks, when I believe the patient is a subject for an ankylosis or loss of function in that knee. So that early active and passive motion should be instituted within a week after operation.

Dr. William Jepson, Sioux City—I want to call attention to the fact that while it is a very simple operation to care for a fractured patella, possibly as simple as that of doing circumcision, but, gentlemen, don't you undertake it and don't you labor under that impression until you have become absolute masters of aseptic surgery. I realize that I do not need to say this, because every one of you is master of aseptic surgery. But, as has already been said, there is no joint in the body more susceptible to infection than the knee-joint; in fact, all joints are susceptible to infection, but the consequences are more serious in the case of the knee-joint. Gentlemen, I find that after all these years my surgery has been very poor, though it has been my fortune to see a fair number of fractured patella, both those that have been fractured somewhat recently, and those that have been treated by the so-called expectant treatment with the result that they had a ligamentous union that would not hold if the patient happened to put the weight on the knee in a semi-flexed position, when it was simply torn and the patient had the old difficulty over again. I wish to call attention to what I think is a comparatively simple way of fixing or repairing a fracture of the patella and one that has served me very satisfactorily. The plan consists in suturing the

patella. The material employed for suture of the same consists of two or three strands of silkworm gut carried through openings drilled in the patella. Beginning from one-half to three-quarters of an inch back of the fracture line on the anterior surface and carried down to the cartilaginous attachment on the under surface of the patella, there being two strands carried through each fragment of the patella, the same being tied together firmly, approximating accurately with the posterior or cartilaginous surface of the patella. The threads are then cut short upon the upper or lower side of ligation as desired, and one of the uncut strands passed underneath the suture above or below as the case may be and the same firmly tied with the other strand. This approximates the anterior surface, making the union strong enough so that the quadriceps extensor could if contracted extend the leg without any danger of the suture line giving way. The two lateral aponeuroses are fixed by suture, skin closed, limb kept at rest for a week or ten days in a cast after which passive motion is instituted. The silkworm gut sutures have never in my experience given rise to any trouble in necessity of removal, thus differing from the metallic sutures.

Dr. Augustine—I heartily agree with what Dr. Jepson has said in comparing the simplicity of a circumcision to operation on the patella. I cannot disagree with anything pertinent that has been said in this discussion. I believe that in cases where the lateral aponeurosis has been torn this is the important part of the injury, and it is the thing I laid stress on. Certainly the inside of the joint should be carefully cleansed and the fragments brought in close apposition. It is not very important whether you get bony union or not, and I am not sure one ever gets bony union. However, whether you get bony union or not, if the lateral aponeurosis is pulled up good and taut and sutured, and is not torn apart in later manipulations, a good result is probable.

THE RESPONSIBILITY OF THE HEALTH OFFICER IN PROTECTING THE PUBLIC WATER SUPPLY*

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In many communities, particularly those of smaller size, the health officer is the city official most likely to be familiar with the technical side of the examination of water and the conditions under which water is likely to become contaminated and unfit for public consumption. In the larger cities and towns it may be expected that the water works superintendent, and the city engineer will be fully awake to the necessity of safeguarding the water supply, and familiar with

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the methods of protection, purification, and with the meaning of the analytical reports. In the smaller places too often the operation of the plant is entrusted to a man whose knowledge is limited to the operation of the pumps, and even they may suffer from his neglect or from his inexperience. The economic reason for this condition is obvious.

Frequently the plant is badly located. Sometimes this is because the town has grown around the plant, as at Cedar Rapids where the nearby industrial plants make a real fire hazard, and cramp expansion. Sometimes, particularly in the case of well installations a location may be chosen in a congested part of the community, at a place almost certain to lead to the contamination of the supply. Beneath the city hall is a favorite place for the well.

If the health officer himself appreciates the dangers of a polluted water supply, informs himself as to the character of the water, keeps in touch with those in control in order to learn of improvements, of unusual conditions and if he knows where he may secure assistance in time of doubt or emergency, he is well equipped to give his community the protection which it deserves and has a right to expect.

To begin with, it is required that plans for all water works, and the extensions and improvements to them, be submitted to the State Sanitary Engineer for approval. This is intended to prevent loss of money due to poorly designed, obviously inadequate, or wastefully large plants, prevent the installation of wells in unsuitable places, and give such other service as an inspection of the plans in the office may render. Such approval of plans should, if possible, be supplemented by a field inspection by a representative of the state sanitary engineer while the plant is under construction, and again after the completion of the work. This is the first service that the state offers the community in order to insure water supplies which should yield satisfactory water.

But once a properly designed plant is placed in a properly selected location there are other matters that must be considered. The quality of the water may be subject to certain conditions or abnormalities over which there is no control from the surface, and which cannot be foretold with certainty. To be sure it is usually known if the underlying rock is soluble limestone, full of crevices carrying water, but no one can say for certain how far contamination caused by the dumping of sewage into abandoned wells or sink holes may carry. If there is any doubt about these matters test holes should be put down before

any serious construction work is undertaken. This entails some delay because a certain amount of contamination usually accompanies the sinking of wells, and the wells should be pumped for several days or weeks in order to be sure the quality is representative. The state, through the water laboratory, offers to the community the opportunity to know the sanitary quality of its prospective water supply. One of the prospective services, not yet realized, is the opportunity to know the mineral character of the water. So far it has not been possible to include the mineral analyses on account of the amount of work to be handled and the inadequacy of assistance.

Even after a good supply has been in use the matter is not closed. The supply must be kept in that condition. Conditions change in the community usually bringing increased water use. Ultimately it taxes the original supply to the limit. The call on the supply for more water than it originally yielded may bring change in quality. Plants designed for one class of service must sometimes be employed for another. Thus the city water plant of Iowa City, designed to treat a clear water high in iron, low in bacteria, must now treat a turbid water, still showing some iron but now heavily contaminated and carrying thousands of bacteria per cubic centimeter. The plant must stand up to these new requirements. If it cannot, the public should be warned and take notice accordingly. The state, by means of periodic examinations made through the water laboratory, offers the community the chance to know how the conditions are being met.

Deterioration of equipment is one of the sure accompaniments of the use of the plant. In the case of pumps the deterioration is fairly obvious. In the case of wells, and particularly well casings it is far from obvious. Much of our water has an effect, more or less rapid upon metal casings such as are used in the deeper wells. In time they rust through or otherwise become imperfect. Then they may allow the pollution of the well by surface drainage which frequently carries material resembling sewage, possibly infected with the specific organisms of typhoid fever, and other intestinal disorders. A common fault is the casing of wells to too short a distance. Sometimes the casing is not set properly or is not even carried into the rock. In one of our larger cities, the community is dependent upon the water from wells 1400 feet deep, and cased 800 feet. The casing of one of the wells has become a menace twice within six years. Periodic examinations discovered the matter and proper measures were taken before any intestinal difficulty appeared.

If the condition had gone on unnoticed, an epidemic might have been the result.

Deep wells are less likely to be subject to seasonal changes than are the shallow wells, especially if the latter are fed from coarse gravelly material in sheets. Shallow wells usually have a greater opening at the surface to be protected, are usually located more in accordance with the local surface topography, more subject to overflow, and often are not in shape to keep out the surface drainage, due to the nature of the top of the well and the condition of the upper part of the masonry casing.

Supplies that require purification are naturally taken from sources that continuously or intermittently receive contamination. The safeguard of the public is the apparatus. It must be operated properly or it becomes a liability rather than an asset to the community. Moreover it must operate efficiently at all times. Varying conditions of the water require different treatment to be applied. The state cannot supply the protection which a capable man in charge of the plant can assure, or it cannot prevent the damage which an inefficient man entrusted with the control of the purification equipment may cause. It can tell how the operation is proceeding at any particular time however, and it can offer assistance and advice to enable the competent operator to manipulate his plant so as to protect the public. The community chooses its operators for its plant. If it chooses unwisely, that is beyond the control of the state at the present time. New Jersey, and it is believed one or two other states, are now requiring that water works purification plants be operated by men who have passed examinations, both theoretical and practical, in the operation of their equipment. It is a step in the right direction, but one which involves difficulties for the small community.

In order to serve all of these classes of plants, the state board of health endeavored to insure a periodic inspection by requiring that all public water supplies in the state should be examined semi-annually. It soon became apparent that, while this was satisfactory for many supplies, for others, especially the shallow well supplies and purified waters, the examination was inadequate to protect the public.

As a result of experience the board therefore passed a resolution requiring the examination of wells of good quality as shown by the last examination, if the well is over 100 feet in depth, to be repeated at intervals not greater than six months; if less in depth than 100 feet to be examined at intervals not greater than three months.

Wells of doubtful or unsatisfactory quality, and all water supplies employing purification apparatus, are to be examined at least once a month in the water laboratory of the board or in an authorized laboratory which must report its findings to the water laboratory for record.

Another service which the board has inaugurated is based upon the requirement upon purification plants that they report to the water laboratory at weekly intervals giving the amount of chemicals used, the amounts of water pumped, and other details of operation so that the treatment may be checked in case of difficulty in handling the water. In such an emergency the plant may obtain assistance in the solution of its difficulty.

These are among the services which the state offers to the community and which it expects will be used for the benefit of the public. The local health officer can assist the state agencies by insisting that the water supply be given the benefits of the service which awaits it.

New officials will be ignorant of the regulations and of the advantages to be derived from control of the supply. The health officer can enlighten them.

When examinations have been made, the health officer can secure adequate publicity. It is important for the community to know that the city water is safe. Indeed it may bring about the lessened use of private wells if the public learns to appreciate the city water. And the shallow private well is a danger to its owners in many cases.

It is assumed that the health officer keeps on the lookout for any cases of typhoid fever or other epidemic intestinal disorder and that in event of the appearance of such difficulty he at once tries to learn the cause. Should he wish to learn the condition of any private wells, the water laboratory will make such examinations for him. Or if the owners merely wish from curiosity to know about the quality of the water of the family well, the laboratory will examine water from it.

The present law requires that a fee of \$1 for each water specimen be charged and that all transportation charges on the containers supplied be paid by the person sending in the samples. On account of the unsatisfactory nature of the results on samples sent in in miscellaneous bottles, it has been found necessary to require all specimens to be sent to the laboratory in the special containers provided. Ice packing should be used in returning the cases, and will materially reduce the changes of a bacteriological and chemical nature that might affect the opinion upon the sample.

A letter of explanation is always sent with the report of the analysis unless the report is satisfactory. Sometimes the health officer may wish to interpret the results himself. This is a complicated matter, much like a diagnosis, and one in which experience is necessary. Much of the matter in the usual texts treats of the waters of the eastern United States which have certain important differences from the waters of Central West from a chemical standpoint.

In water examination no attempt is made to look for the typhoid organism itself, because the chances of missing it are too great. No report goes out of the water laboratory which attempts to say whether or not the *B. typhosus* is present. The effort is made, instead, to learn whether organisms of the colon group are present in the water or not. If they are, they indicate the presence of sewage-like material, which is itself likely to carry the specific organisms of typhoid fever and similar diseases.

CONCLUSION:

The duty of the health officer in protecting the public water supply consists in understanding the problems of the local water plant, seeing that the officials in charge take advantage of the services that the state stands ready to offer, insisting upon prompt action in case of difficulty, and seeing that the public is informed as to the actual state of the water supply, whether it be good or bad.

THE FAT REACTIONS IN APPENDICITIS AND CHOLECYSTITIS*

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There are many questions in medicine which seem at first sight very simple and already solved but a farther investigation shows that we are yet very far from a really definite ideal solution of them. This fact makes the paramount difference between medicine and the accurate sciences; and in this possibility of an eternal endeavor to solve the hardest enigma—the problem of life, there is the allurements of our science.

I want to call your attention today to one of these questions, simple, at first sight, the question of the fat reaction in appendicitis and cholecystitis. Pathologists, who have to work daily on the routine microscopical examination of surgically removed appendices and gall-bladders, could not fail to note a very remarkable component of the

pathological changes of these organs. This component is the accumulation of fat in the wall of these pathologically changed organs. These fatty accumulations invariably occur in them and their examination reveals a very interesting relationship between them and the stage of involvement of the organ. In spite of these facts, I could not find in the obtainable medical literature a more or less detailed description of this process, which bears evidence of the pathological changes of the organs and is also of great practical importance, as far as the gall-bladder is concerned, for the choice of a method of operation in the doubtful and questionable cases. I found a few words on the appearance of these fat accumulations only in the obliterated appendix. And a few months ago Moynihan noted, apropos, in an article in the *Br. J. of S.* No. 37, the appearance of fat droplets in the gall-bladder wall in infectious cholecystitis. Interested in this question I made use of the surgical material of the Iowa State University Hospital for a detailed investigation of it. I re-examined about 400 appendices and 80 gall-bladders, surgically removed during the last two years and eleven months. I turn to the results of my investigation.

Appendix—In spite of the numerous treatises and contributions on the pathology of the appendix, the pathogenesis of appendicitis is still not clear. We still meet in this important question with diametrical opposite opinions, as the hæmatogenous bacteriological theory of Kretz and that of Aschoff and his students. Even the substratum of the pathology of appendicitis is not yet clear enough. The obliteration of the appendix, the primary effect, the essence of chronic appendicitis and of the appendectopathy of Aschoff—these all are questions still awaiting their definite solution. And finally even the normal anatomy of the appendix is yet not clear to everyone. We conclude this from the drawings of normal appendices, appearing from time to time in text-books on anatomy. These appendices with their markedly thickened submucosa, with the sclerosed internal layer of it, and the presence of deposits of fat in the middle layer, and often with a prominent segmentation of the external muscularis—surely do not represent normal appendices. All these features of the drawings distinctly show that the authors dealt with a priori pathological specimens. It was not my task here to attempt to solve one or another of the still doubtful and disputable questions of the pathology of the appendix on grounds of our mediocre material. These questions are not of importance to us here and we will not pay attention to them in

*Presented before a meeting of the Medical Society of the State University of Iowa on February 12, 1923.

this paper. We are here only interested in the question of the accumulation of fat in the wall of the involved appendix. And, as much as it will be necessary for a complete investigation of this question, we will also touch upon other pathological changes of the appendical wall.

As it is well known we find the most striking pathological changes of the wall of the appendix in a more or less chronic inflammatory process in the submucosa. Here, in the submucosa we always find an accumulation of fat. The frequently repeated inflammatory irritation of the appendix leads to a prominent exuberance of the delicate connective tissue of the normal submucosa. The chronic inflammation, with the lymphoid and leucocytic infiltration of the wall leads to a fibrillar change of the reticular connective tissue of the submucosa. This connective tissue shows an inclination to sclerosis and gradually it becomes poor in cells. In a changed submucosa we can distinguish three layers: (1) An internal fibrillar layer, consisting of loose connective tissue often infiltrated with round cells; (2) an internal fibrous layer, attached to the muscularis, and consisting of hyaline dense tissue poor in cells; (3) a middle layer, containing masses of fat tissue. In the delicate submucosa of a normal appendix we very seldom find small amounts of droplets of fat around the blood-vessels. The deposits of fat in our pathologically changed appendices are constantly found and consist of masses of well developed typical fat tissue. These deposits of fat in the submucosa we found in all cases of appendicitis examined. In many cases these fat deposits were so large, that they formed a separate, distinct layer which we would suggest should be differentiated as "stratum adiposum" of the submucosa of the involved appendix. It was not difficult for us to establish a constant regular relationship between the degree of the pathological changes in the appendical wall and the amounts of fat in it: the more chronic the pathological process is the larger is the amount of fat found in the submucosa. This relationship is so characteristic that we are able to establish the diagnosis on grounds of this single feature. These accumulations of fat do not depend upon the age of the patient neither on his state of nutrition. So we have stated, that a normal appendix, removed at autopsy from a body with $1\frac{1}{2}$ inches thick subcutaneous fat layer of the abdominal wall, did not contain any traces of fat in the submucosa, while a pathologically changed appendix, removed at autopsy from a greatly emaciated body showed a distinct "stratum adiposum" in the submucosa. As far as the distribution of

the fat tissue along the appendix is concerned we found, that the largest amount of fat is deposited in the distal part of the involved appendix and less fat in the proximal portion. And this is self-understood: the inflammatory process in the appendix is more frequent and more severe in the distal part. The accumulations of fat do not disappear from the submucosa even when the inflammatory process temporarily subsides and the involved mucosa is regenerated. In these cases the tell-tale deposits of fat bear evidence on the chronic process not less if not more than the classical segmentation of the external muscularis of Aschoff and all other characteristic sclerotic changes of the submucosa.

Except these, said, intramural fat deposits of the pathological appendix we always note an ac-

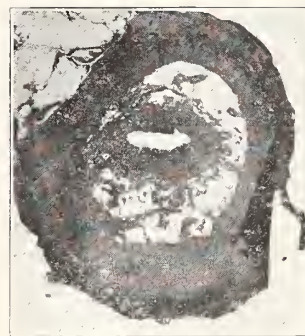


Figure 1—Chronic appendicitis. Showing the "stratum adiposum" of the submucosa. Enlarged one-fourth.

companying reaction of the extramural, normal, fat deposits of the appendix—of its mesentery. This reaction takes place in the more serious cases, does not disappear even in case the acute inflammatory process subsides, and is a constant silent witness of the involvement of the appendix. This reaction consists of an increase in fat tissue and thickening of the mesentery and a retraction of it towards the tip of the involved appendix. This process is so characteristic, that at the sight of it we unwillingly think, that the mesentery has purposely approached the dangerously involved appendix to protect the abdominal cavity from the threatened perforation. The reaction is so prominent, that it is hard to forget it even having seen it only once in a life time. What is the explanation of that reaction? What is the morphological base of this practically expedient process? To answer this question we will turn again to the histology of the involved appendical wall. The muscularis reacts in chronic inflammation in the following manner: both muscular layers are thickened, although the circular muscularis is much more thickened than the longitudinal external muscularis. This thickening of the mus-

cularis is due to an increase in intermuscular connective tissue. On the mesenterial side we often note defects in the muscularis about $1\frac{1}{2}$ mm. wide. These defects, and in this we agree with Tomita, are due to sclerosis and contraction of the connective tissue interstitium of the appendical wall, combined with the normal weakness of the muscularis on the mesenterial side, due to the fact, that there enter and pass the branches of the appendicular artery. Due to the high pressure in the appendical lumen layers of the submucosa enter into these defects and we often find them containing single muscle fibrills, invaginating into and passing through these defects to the mesentery. Due to the constant contraction of these elements the thickened mesentery retracts approaching the appendix.

Gall-Bladder—Let us recapitulate in short the structure of a normal gall-bladder. There it is easy to distinguish three layers: (1) the mucosa, lined with a high cylindrical epithelium, resembling that of the intestinal tract and forming the so-called Luschka's or better Aschoff's crypts, which extend into the muscularis of the wall. The tunica propria of the mucosa is rich in elastic fibrills; (2) the muscularis, consisting of a large circular and a smaller longitudinal layer; (3) a layer consisting of the serosa and the subserosa. In these two last components we easily distinguish: (a) a dense fibrous layer; (b) a loose subserosa, and (c) a dense serosa. In a normal gall-bladder we sometimes find in the loose subserosa small droplets of fat, though more often it is absolutely free of any lipoid substance. But even in an acute or subacute cholecystitis double refractive granula of fatty character appear in the loose subserosa. These granula appear at first around the vessels and later on they fill diffusely the subserosa, covering the wall of the gall-bladder. Should the inflammation subside after producing the very early changes the gall-bladder may return to normal gross appearance but the fat accumulations do not disappear. More striking are the accumulations of fat in the subserosa in chronic cholecystitis. The high pressure in the gall-bladder, occurring from time to time, due to biliary stasis leads to gradual extension of Aschoff's crypts through the muscularis to the fibrous layer of the subserosa. Later on an attempt of nature to repair the involved mucosa leads to an exuberance of adenoid tissue. Due to a following increase of secretion of the changed mucosa, together with an exfoliation of its lining elements the pressure in the gall-bladder goes up. This constant irritation of the wall results in an increase of the interstitial connective tissue of the

gall-bladder. An induration and gradual atrophy of the gall-bladder wall completes the classical picture.

We found that all these changes are accompanied, in all cases of cholecystitis examined, with an accumulation of fat in the loose layer of the subserosa. This "stratum adiposum" of the subserosa, which is frequently very thick, causes in the main part the prominent thickening of the wall in chronic cholecystitis. These deposits of fat in the subserosa cause the characteristic ochre yellow color of the chronically inflamed gall-bladder. The deposits of fat here, like those in the appendix do not depend upon the stage of nu-

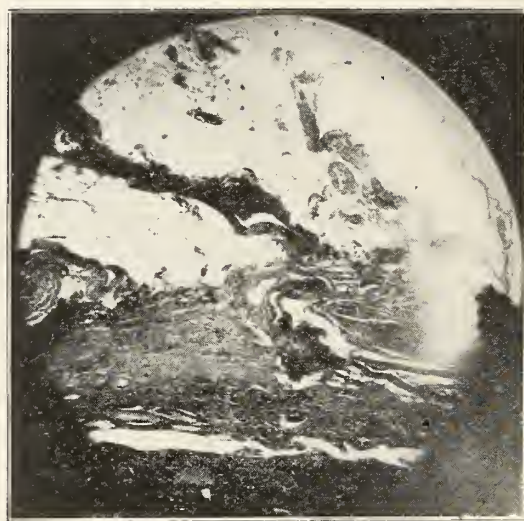


Figure 2. Appendix with fecal concretion in lumen. Showing a defect in the internal and external muscularis. Enlarged one sixth.

trition of the patient. Here also we are able to establish the diagnosis from the presence of the stratum adiposum in the wall of the gall-bladder.

Such are the results of my investigation. They raised a question before me: are these deposits of fat in the wall of the appendix and the gall-bladder characteristic only for these two organs or can we find them also in other involved abdominal organs? I re-examined twenty-two cases of ulcer of the stomach, of ulcer of the duodenum and chronic gastritis and sixty cases of chronic salpingitis. In all these cases are involved organs, in the wall of which there are distinct layers of loose connective tissue, which, as some authors claim, is a condition sine qua deposits of fat in tissue is impossible. The results of this examination are following: in involvement in the stomach and duodenum we found deposits of fat in the subserosa only in 40 per cent of cases examined—in the more chronic cases. In no case of chronic salpingitis did we find such deposits. This striking difference between the

organs of the digestive tract and the Fallopian tubes it is, may be, possible to explain by the difference of the composition of the blood plasma circulating in their walls, i. e. by the high fat content of the blood of the portal vein system. So it is now known, that the thoracic duct is not the only channel, which takes fat into the blood system. Recent experiments on men showed that in the thoracic duct there appears not more than one-half of the amount of fat absorbed from food. And D'Erizzo proved that during absorption the fat content of the portal vein blood was much higher than that of the jugular vein, i. e. that fat was normally absorbed directly into the blood stream. The prominent difference in the fat deposits between the appendices and gall-bladders on one side and the stomach and duodenum on the other, we think, it is possible to explain by a feature characteristic of both first organs. In this feature they differ from the stomach and the duodenum. This is the very weak peristalsis, which is common to both the appendix and the gall-bladder. The so frequently found fecal concretions and other dense masses in the appendical lumen show that the peristalsis of the appendix is exceedingly weak and its movements insufficient. The thick bile and the frequent gall-stones prove that the peristalsis of the gall-bladder is also wanting. The insufficient movement of these organs as well as the induration and sclerosis of their walls in chronic involvement lead to congestion and result in deposits of fat from the blood of the portal vein system, rich in lipid.¹ Except this the high lipid content of the bile, which is three times as large as that of blood plays also a certain role.

Let us now try to find out what the reason is for these deposits of fat in the involved appendix and gall-bladder. As it follows from the results of my investigation these accumulations of fat belong to the complex of pathological changes in these organs. They do not depend upon the nourishment of the patient and they do not disappear in starvation. In other words we would suggest for them the term stable fat in opposite to the labile storings fat of the body. Is this an infiltration of fat or a fatty degeneration, as we could expect on account of the chronic irregularity of the blood supply in these involved organs, we do not venture to decide in spite of the high interest of this question. This question is intimately connected with a solution of the old disputable question on Virchow's term "fatty de-

generation," which was introduced in the literature about seventy years ago. But unfortunately the almost three quarters of a century which have passed since the introduction of this term did not bring us forward to a definite solution of this problem. And even at the present time we meet with diametrically opposite opinions: one side claims: "the question on change of proteids into fat is definitely discredited," and on the other side McCallum categorically declares: "no doubt fats are indirectly derived from proteins." I do not intend to decide here who is right in this old dispute on the, at present, unsolved question of transfer of the highly oxidized glucose molecule



Figure 3. Chronic cholecystitis. Showing the "stratum adiposum" of the subserosa. Enlarged one-fourth.

to the oxygen poor fatty acids and conversion into fat of protein. But it seems to me that the essential point of this whole dispute is wrong. Then if the question of conversion of protein into fat is important from the physiological standpoint it is absolutely unimportant from the pathological standpoint. For, even if it should be proved that this transfer of protein into fat is normally physiologically impossible, it would not mean that it is also impossible pathologically.

There has been yet one question raised before me: are these deposits of fat expedient and what is their purpose? Speaking on the local hyperplasia of fat tissue met with in the local involvements of kidneys and in the atrophy of lymphatic glands some authors explain this hyperplasia as a compensatory function. A similar compensatory function they ascribe to the frequent findings of fat in "healed sclerosed appendices." The fact, that it is impossible to attribute a credible compensatory function to fat tissue, appearing in a sclerosed appendix where the component, requiring compensation, is the atrophic mucosa proves enough that this characterization of the fat deposits is absolutely untenable. In contrast to this opinion on the fat deposits as a passive result of reaction of the organism is the idea of Moynihan. In his recent article, mentioned above, he wants

1. The prominent importance of chronic blood stasis for the appearance of fat in normal tissues I proved last year in my work on the fatty degeneration of the striped muscles. Published in Virch. archiv, volume 236.

to see in the fat accumulations in the involved organ an attempt of nature to protect the surroundings from the threatened perforation of this organ. Although we would be much pleased with such an explanation of these fat deposits as an expedient process, we refrain from the acceptance of that hypothetical explanation lacking any real material base. More reasonable and interesting is the opinion of McCallum: "we are allowed to suggest the possibility that lipid substances may sometimes accumulate in an organ for the protection of the cells of that organ from toxic injury." This his suggestion is based upon the known fact that lipoids absorb toxins. Such an explanation of the role of the fat deposits in our cases is very interesting and is not at all unfounded, as we see from the important role, which is now ascribed to the lipoids. The former respectable reputation of the proteins as the chief factor in the life process is greatly weakened during the last ten years. The so recent sprightly ideal of my ever memorable late teacher G. v. Bunge: "the analysis and the examination of the pure proteid crystals and their decomposition products would form the base of the whole physiological chemistry," belongs now to the past. For we are not far now from attainment of this ideal, meanwhile we have to admit, that not here leads the way to guessing the enigma of life. But insofar as our question is concerned we are unable to defend here the theory of McCallum in spite of all its probability. Unfortunately, our present knowledge of the physiology of the lipoids is still too limited to draw any important conclusions. We are still unable to control microscopically the chief part of the lipoids of the body, which is invisible and plays a direct active role in the life process. The available chemical and micro-chemical methods cannot give us an idea about the morphology of these lipoids. We think therefore that this question about the importance of lipoids will be unsolved until we are able to examine the invisible fat under the lens of the microscope and not in the test tube of the chemist. These are the reasons why we think that our question about the role of the fat deposits in appendicitis and cholecystitis must be left in abeyance. But though the physiological role of the fat deposits is incomprehensible today, this is clear, that these accumulations of fat are very characteristic in the more or less chronic involvements of the appendix and the gall-bladder. As far as the gall-bladder is concerned the fat accumulations in the subserosa causing the typical ochre yellow color of the bladder should always be considered as the most striking sign of chronic cholecystitis.

FISTULA OF THE RECTUM.

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The term fistula is derived from the Latin word "fistula" meaning a reed or pipe. Its application in pathology refers almost exclusively to sinuses found in rectal region.

A fistula is a chronic non-cicatrizing sinus within the tissues adjacent to the rectum or about the anus having one or more openings and resulting from some pre-existing abscess, usually in the peri-rectal or ischio-rectal structures, but not necessarily so. It may originate in some other organ, as the bladder, urethra, vagina or uterus; a suppurating broad ligament or ovary or a necrosed bone. The infection may later burrow into the rectum or the whole trouble may be found to be extra rectal. Therefore just because your patient has a fistulous opening upon the buttock do not presume it must be rectal, but find out what it is and then you will more than double the number of your cures. There are some malignant, tuberculous or syphilitic fistula that are incurable. It is possible that fistula may result from a penetrating wound from without which became infected. Such a termination, however is rare. Most fistula result from improper treatment of the previous abscess. This may be at the operation or during the after treatment, for example, too small an incision at the operation or too long retention of the drainage tube or packing of the wound.

A very large percentage of fistula are due to secondary diseases preceded in their development by other rectal diseases. From the standpoint of treatment, this is the most important period.

In the list of conditions are proctitis, cryptitis, constipation, hemorrhoids, fissure, stricture, ulceration and other rectal conditions, which favor the invasion of the sinuses and diverticula and peri-rectal tissues with pyogenic organisms.

Fistula are often branches or multiple, and the openings may be quite a distance from the anus. The whole perineum and buttock may be indurated and hard, or if the abscess has filled and emptied several times, the parts become honey-combed with a great many fistula communicating with one another. Some part of this great labyrinth is always abscessing. Kelsey reports between twenty and thirty sinuses in one case. In practice about one-fourth of all the rectal cases are fistula.

Why do rectal fistula refuse to heal spontaneously? This question has been answered variously

by different authors. Probably a number of factors combine in each case, and which after all resolve into the single word "reinfection." The percentage of cures is determined by our ability to ferret out these different avenues in the case at hand.

First, there is contact infection by such ways as: (a) forcing of fecal matter into the fistula from the bowel; (b) outside infection through the external opening; (c) sometimes the small opening or the irregular shape of the fistula retains the infection or necrotic tissues and prevents proper drainage of the sinuses; (d) the tuberculous sinus is lined with caseous degenerating granulations and is also surrounded by a dense cicatricial tissue.

In a second class of cases the circulation, venous or lymphatic, is at fault. The human animal spends most of his hours sitting or standing, and in this position there is a sluggish return circulation.

Sometimes, even when the sinuses have been widely opened and thoroughly drained and all sloughing tissue has been removed they still refuse to heal, although careful search fails to show any branches or diverticuli. Hartman has suggested that these persist because of osmosis of infecting agents from the rectum through the thin walls. These tissues became clogged with bacteria which impede but do not strangulate the tissue circulation and it becomes a harbinger of infection. In the same manner there may be a rectal ulcer or other infection which the lymphatics try to carry off but in so doing the lymph glands become overloaded and break down, resulting in an abscess which is drained, thus temporarily relieving the system, but the lymphatic connection between this node and the primary source of infection in the rectum, or wherever it may be, is still virulent and reinfecting the site of the abscess which is the base of the sinus. This method of infection is I think an important factor, because the phagocytic action of the white corpuscles is insufficient or slow. That is, the opsonic index is low.

Although the pathogenic microorganism is usually the streptococcus, staphylococcus or the colon bacillus, it is not always so. Sometimes tuberculosis, syphilis or carcinoma are at the foundation. It is well to remember that 10 to 14 per cent of all patients presenting rectal fistula have active tuberculosis of the lungs, but of course not all phthisical patients having rectal fistula necessarily have tubercular fistula. Hartman found that 50 per cent of his cases were tuberculous. It is estimated that 5 per cent of all tuberculous

patients have rectal fistula. The nature of the infection may be determined by examining the discharge or scrapings from the lining wall of the fistula, either microscopically or by injecting it into a guinea pig.

Any exhausting disease such as rheumatism, diabetes, cirrhosis of the liver or the acute fevers, may have associated an ulceration of the rectum. Typhoid fever and dysentery frequently have such a complication, and then a fistula may result. In the last two diseases a true peri-rectal abscess may be found that has resulted from the escape through the tissues or the lymphatics of the bacteria that caused the original disease.

Frequently the abscess that caused the fistula originated from an injury or ulceration of the crypts of Morgagni and the lymphatic absorption and infection that takes place. This ulceration may persist after the abscess has opened and drained, because the sinus connects by its lymphatics with the infecting host of the crypt, and the pyogenic organisms overwhelm the leucocytes and thus protract the discharge. It is for this reason that it is so all important to ferret out the original site and source of infection. The mobility of the rectal wall, which is always a part of the fistula, is ascribed as a factor in the chronicity of this condition. Every movement of the rectum, perineum or legs, every respiratory, or involuntary peristaltic movement disturbs the approximating surfaces of the sinuses, and a moving surface or course cannot adhere.

Fistula are classified as:

1. Complete (ordinary) the internal complete and internal.
2. Incomplete or blind, external and internal.
3. Horseshoe.
4. Recto-vaginal.
5. Recto-vesical.

The ordinary complete fistula is a sinus with an internal opening into the rectum and one or more openings on the skin. Hence its name. This is the most common type of fistula. An external complete fistula is one with both of its openings on the skin and not communicating with the rectum; while an internal complete is one with both openings within the rectum and not involving the skin. Not every fistula communicates with the rectum, although the great majority of fistula do, especially if the abscess has existed for some time and has filled and ruptured repeatedly. The complete fistula results most frequently from an abscess situated in the ischio-rectal space, the triangular space, or the deep perineal structures.

An *incomplete fistula* represents an abscess that ruptured early without much burrowing or under-

mining. An incomplete or blind external fistula usually begins as a marginal abscess, although it may begin in the peri-rectal or ischio-rectal structures, and opens upon the skin but does not extend into the rectum. An incomplete or blind internal fistula usually begins as an ulcer within the anal canal and most frequently from a cryptitis. It has an opening into the rectum and a sinus extending into the peri-rectal tissues, but has no other opening into the rectum or upon the skin. It differs usually from the complete variety in that there is a broad undermining of the mucous membrane instead of narrow channels. The internal opening is situated often at the base of an ulcer or hidden in the folds of mucous membrane. If posterior to the rectum, the fistula may be superficial or deep but if anterior it is usually superficial. The posterior, deep internal incomplete fistula usually is the result of an abscess in the triangular space of the rectum.

The horseshoe fistula is nearly always of long standing and takes its name from its fancied resemblance to a horseshoe in shape. In this variety, the original openings have become blocked and the retained pus burrows in a new direction and finds a new outlet. Thus a typical fistula has one opening within the rectum and one or more external openings on either side of the anus. Sometimes the pus burrows around the rectum in the loose areolar tissue and forms a new opening on the opposite side of the anus from the first. In this burrowing the pus generally passes posterior to the anus, and very often the internal opening is found in the median line posteriorly. There are many deviations from this typical description. A horseshoe fistula may have only one external opening and yet the pus may have burrowed all around the rectum, the resulting fistula being either complete or incomplete in form.

Recto-vaginal fistula are of two kinds: first those high in the vagina, and second, those in the lower part. On the whole, they are uncommon. If the opening is small there is little escape of feces while the stool is formed, but one of the most common and distressing symptoms is the escape of intestinal gas which produces a bubbling or hissing noise. The patient has of course no control over the escaping gas and the odor finally forces her to avoid society and to stay at home until she becomes melancholy from brooding over her trouble. A fistula in the upper part of the vagina is usually due to cancer of the cervix which generally has progressed so far that curative treatment is out of the question. In the lower part of the vagina and at the vulva fistula often results from imperfect union in repairing a

torn perineum or from the sloughing of the septum after tedious parturition.

Entero-vaginal fistula or openings of the small intestine into the vagina are traumatic openings produced during operation, or else congenital or artificial vaginal ani.

Recto-vesicle fistula like recto-vaginal are the result of traumatism or malignant disease.

THE SURGICAL ASPECTS OF UTERINE MALPOSITIONS*

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The surgical consideration of displacements of the uterus is rather a broad subject, and a discussion of the same must necessarily take up separately the types of mal-positions, not alone from an anatomical standpoint, but also from the standpoint of the age of the individual and associated pathologic conditions. In reviewing the subject of the various mal-positions within the limited scope of a single paper, an endeavor will be made to make a simple classification and succinctly consider each group separately upon its own merits.

The largest number of mal-positions of the uterus would seem to come in a classification of retrodisplacements of varying degrees. In a general way, retrodisplacements may be classified as (1) simple retrodisplacements; and (2) complicated retrodisplacements.

Simple or uncomplicated retroversions are common. It is estimated that in over one-fourth of the women the uterus occupies a retroverted position. Apparently in the majority of them there are no symptoms which can be correctly assigned to this position of the uterus. It is probable that in many such cases the cure of cervicitis, or endocervicitis, or the repair of a pathologic cervix will remove all existing symptoms without treatment of the retroposition. Backaches or other general symptoms should not indicate a surgical procedure for a simple or uncomplicated retroversion until all other potential causes, gynecologic or otherwise, have been removed.

In the second group may be placed those cases in which concomitant pathology has existed for some time and the uterus has developed some pathologic conditions of the endometrium or metrium. Pelvic adhesions interfering with the free mobility of the retroverted uterus may produce symptoms worthy of surgical relief. This condition may exist to a greater or less degree of

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severity. The time has come about, however, when retroversions are taken less seriously by the gynecologists than some twenty years ago.

For the relief of uterine misplacements, without prolapse or with a moderate degree of prolapse, some type of round ligament operation is probably the most logical. The uterus is movable in its normal suspensory mechanism of the round and broad ligaments and rests upon the pelvic floor. This anatomic fact should be the governing principle of all procedures for replacements of uterine malpositions. Those procedures which are antagonistic to this principle do not give the full degree of relief that should be had from an operation for a retrodisplacement. Either the attachment of the uterus to the abdominal parietes or some acrobatic handling of the round ligaments will frequently lead to the production of some symptoms not previously existing, even though the uterus is apparently held thereby in a perfectly normal position.

The various types of round ligament plications present recognized merits. The Coffey technique is very efficient in many malpositions.

The degree of malpositions varies in different cases, as well as the degree of laxity of the peritoneal suspensory ligaments of the uterus. The important feature, however, is the fact that the relative planes of the internal ring and of the fundus of the uterus vary remarkably in individual cases. It has always appeared to us that each case should be individually considered; and, instead of making a more or less universal application of a particular type of plication to all cases, one should upon inspecting the pelvis consider himself in the position of a carpenter who has before him material from which to work out a result. By separately and with forceps grasping the fundus of the uterus and the two round ligaments, the uterus can be lifted to a desired position and the round ligaments and pelvic folds laid out upon it in a manner which would seem best to maintain the desired position. By painstaking measurements, a position for the best plication of the ligaments can be ascertained. This should be one which will produce an even distribution of weight bearing, and at the same time the maximum degree of peritoneal fixation. It is recognized that the musculature of the round ligaments will finally draw out of any sutured situation, and our ultimate dependence must be placed upon that peritoneal fold of the broad ligament (and associated fibrous tissue) which is a part of the round ligament. The pursuance of this principle will disclose the fact that in some cases plication should extend largely over the fundus and the

upper portion of the posterior surface, and in other cases the relative planes of the uterus and interior rings indicate a plication largely to the fundus and anterior surface of the uterus.

The suturing technique is of less consequence, excepting that it should be adequate and extensive, so as to give the ligament a firm and thorough hold which will not draw out.

Pulling the round ligaments through the broad ligaments beneath the tubes apparently does not constitute as durable nor as anatomic a result, and at the same time may lead to subsequent symptoms not previously existing. In those cases showing an extreme anterior situation of the cervix, a shortening of the sacro-uterine folds materially helps to hold the uterus in its restored situation, as well as relieving the pull upon the shortened round ligaments. It is probable that the shortening of the sacro-uterine folds should be more often performed.

It is especially desired to emphasize in this paper the principle of adapting the technique used to the anatomic conditions found in individual cases, instead of applying a fixed technique universally to all retroversions. It is believed that the result obtained in a series of cases will be materially better if we apply mechanical principles to each case of retroversion, rather than fit each case to certain mechanical ideas.

The type of uterine malposition commonly termed prolapse seldom exists without symptoms, and usually progresses until it becomes a surgical disease. Prolapse of the uterus might more technically be placed in the classification of a hernia through the pelvic floor. Phases of prolapse of the uterus are extremely variable. It may be manifested only by a cystocele without the appearance of the cervix at the vulva, unless traction is applied to the cervix to demonstrate beginning hernia.

Prolapse of the uterus has often been divided into a classification according to the degree of prolapse; namely, first, second, third, and fourth degree of prolapse. A surgical consideration of prolapse, or hernia of the pelvic floor, however, usually calls for a classification not so much according to degree, as according to age; namely, prolapses which occur between the ages of twenty and forty; those which occur during the menopause; and those which occur in patients who have passed the menopause. The treatment required during these different periods of life are usually entirely different.

A prolapse occurring prior to the age of forty is seldom of the third or fourth degree. The problem in this class of cases can usually be ef-

fectively met by an efficient repair of the pelvic floor and a round ligament suspension. It is probable that a restoration of a small hernia at this time of life would prevent many of the third and fourth degrees of prolapse which present themselves for consideration at a later date.

The pelvic hernias occurring in the second period of a woman's life are frequently of the third and fourth degree of prolapse. In such cases, cystocele is the conspicuous symptoms. In this period, if the prolapse is only of the first and second degree, the repair of the pelvic floor and the round ligament procedure is usually efficient. But in the third and fourth degree of cases, a more radical procedure is indicated. The interposition operation, as perfected by Watkins, is very logical. When done strictly in accordance with his technique, followed by an efficient perineorrhaphy, a very perfect result is obtained in selected cases. The operation is relatively free from danger, as well as free from most operative discomforts, and gives a relatively short convalescence. The technique is so well known that we are not warranted in consuming your time with a discussion of the details.

For this second period of life, an operation which we advocate for the third period is also applicable, especially if there is any existing or potential uterine pathology; namely, the vaginal hysterectomy procedure, which will be taken up in the consideration of the third period.

In the third period of life, the usual hernia of the pelvic floor is of the third or fourth degree, instead of the first and second, as in the first period. The uterus is usually atrophic, or in the early stages of atrophy. It is too small to serve the purpose it is required to serve in the interposition procedure. If the interposition is done at this time, it is probable that ultimately the fundus will present itself at the vulva instead of the cervix, and the bladder will follow it to the outside.

Kocher's technique, consisting of placing the body of the uterus outside of the linea-alba; Murphy's technique of putting the uterus in the same position, having previously split it in two and spreading out the two halves laterally on the external surface of the external fascia; and Mayo's technique of a supra-cervical hysterectomy, suture of cervical stump to the internal surface of the sheath of the rectus—are all applicable only to those cases where the vaginal walls are long enough to permit of so extreme an elevation of the uterus. As pointed out by Franklin Martin many years ago, there is usually in such cases an atrophy of the posterior vaginal wall. These procedures appear strong and efficient. In the event

that they can be carried out, however, they do not give the anatomic result that is obtained by the Mayo technique of vaginal hysterectomy with a folding over of the relaxed broad ligaments. It must be borne in mind that the anatomic support of the outlet of the pelvis above the true pelvic floor consists of the structures of the broad ligament, including the round ligament. Hysterectomy removes the weight of the uterus, and at the same time the lateral ligaments are shortened by folding them upon each other. The firmness of this support is always adequate to maintain the vault of the vagina in its normal situation. The bladder, fastened to this new transverse peritoneal ligament, is adequately held upward so as to cure the cystocele. By turning the cut edges of the broad ligaments downward and outward, no exposed surface is presented in the peritoneal cavity, and the danger of intraabdominal bleeding is obviated. We have found this procedure extremely efficient and its effects lasting. The repair of the perineum is of course always used to supplement this procedure.

In conclusion: First, the average simple retroversion is not pathologic and is not a surgical lesion. When it is complicated, and when it presents surgical symptoms, the type of round ligament operation employed should be such as to mechanically meet the requirements of the individual anatomy of the subject under consideration, rather than following out any definite type of round ligament operation.

Second, when hernia of the pelvic floor occurs during the child bearing period, it is usually of the first or second degree of prolapse, and can be best remedied by the round ligament operation with repair of the pelvic floor.

Third, during the second period of life, prolapse of the uterus may be best relieved by either Watkins' interposition operation or the Mayo technique of vaginal hysterectomy.

Fourth, during the third period of a woman's life the vaginal hysterectomy with reconstruction of the transverse peritoneal ligaments gives the best anatomic repair and the best functional results.

Fifth, all repair procedures should be made with the principles of normal anatomic conditions in mind and with special efforts to make said procedures in consonance and harmony with normal anatomy.

Sixth, attachments of movable viscera to fixed structures, or in situations where a normal degree of mobility cannot occur, or in such a manner as to subject the new formed attachments to any undue degree of tension, are neither durable nor functionally correct.

The Journal of the Iowa State Medical Society

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PANAMA CANAL

To obtain a definite idea of the Canal Zone we may consider first the Continental Divide as a continuation of the Cordilleries range of mountains into Panama, and that part of Panama on the Atlantic side of the Divide to the ocean with a range of rather high hills retreating rapidly, leaving a wide valley, and then converging at a point about eight miles from the Atlantic, called Gatun, where they converge until the hills on each side are only about 1000 feet apart. The Chagres River rises far to the south, probably in Columbia, and runs in a narrow valley until it enters the valley above described, two or three miles east of the Divide and flows on—or did flow—into the Atlantic. In early days this part of the river was used as a part of the means of transportation across the Isthmus. When the Canal was constructed and the lock system adopted, a great dam was built at the narrow point where the hills approached nearest—at Gatun—and included Chagres River, which caused the river to set back and fill the valley as far as the Divide to a height of eighty-five feet above the Atlantic Ocean, covering an area of 156 square miles to a maximum depth of 100 feet.

The problem at the Divide was to cut through and form what is known as Culebra Cut to a depth of forty feet below the level of the artificial lake known as Gatun Lake. This was a difficult undertaking and is still a difficult problem, on account of the tendency of the Panama Republic

to slide into the Canal, and large dredges are in the position of a fire department, to be called to keep the Canal open for traffic. At our visit, without warning, 650,000 cubic yards of the Republic slid into the Canal, but did not interrupt traffic.

After passing through Culebra Cut at the first convenient place, at Pedro Meguil, the first step down from Lake Gatun is taken by the Pedro Meguil Locks into another smaller artificial lake—Miliflores Lake. Again on the Pacific side of Miliflores Lake two more steps down are taken into the Pacific end of the Canal. Thus a ship entering the Canal from the Atlantic end reaches Gatun, is lifted eighty-five feet by means of three locks into Lake Gatun, and after sailing about twenty-five miles, passes through Culebra Cut and soon reaches Pedro Meguil, where by means of a lock, is let down about fifty feet into Miliflores Lake. Sailing across the Lake the ship reaches Miliflores Locks and is lowered by two locks from thirty-five to fifty feet—according to tide—to the level of the Pacific Ocean and sails on past Balboa Docks into the Pacific Ocean. The time from the Atlantic to the Pacific is from six to eight hours. The ship moves on its own power, except when passing through the locks, where electric engines running on the walls with taut cables from the ship to the engines, two, three, or four engines on each side—according to size of ship—to keep the ship straight in the lock and prevent damage to the ship or locks from contact.

The locks chambers are 1000 feet long, 110 feet wide and 90 feet deep.

Through the courtesy of the Superintendent of Pedro Meguil and Miliflores Locks, Mr. William Holloway, formerly of Oskaloosa, Iowa, the gifted electrical engineer who installed the electrical apparatus in the beginning through his own initiative and without precedent in so great an undertaking, we had the opportunity of witnessing the development of a most accurate and astonishing system of operation, which enables an operator to sit at a table in the lock tower and pass a ship through the locks without seeing the ship or uttering a word, by means of a system of levers not more than three inches in length. This remarkable work is directed by observing a small model of the gates before him and upright cylinders bearing colored cards which indicate the rise and fall of the water in the chambers—for it would be impossible to move the gates until the water is at the same level on each side. The water enters and escapes from the chambers controlled by valves which are opened or closed by

the operator sitting at his table in the lock tower.

The traffic through the Canal is constantly increasing. During the month of January 365 commercial ships passed through, returning to the Government about \$1,200,000 in tolls.

The locks which, indeed, control the Canal, are immense structures and work so smoothly that unless one follows Mr. Holloway into the tunnels running under the lock walls for a distance of 1000 feet or more, and witness the orderly succession of complicated machinery moved by unseen hands—which in earlier days would have condemned him to be burned at the stake for witchcraft—and contemplate that the breaking or short-circuiting of a wire would throw everything into confusion and danger. But, signals are so arranged as to give warning of what has happened, and other lines are set into operation, and only the expert operator knows that anything has happened. Great gates are placed at the end of the locks and so operated by electricity that if anything should happen to the lock gates, the immense structure can be swung across the Canal like a dam and prevent disaster. These gates or coffer dams are operated once a month to know that they are in working order.

These are some of the things that appear on the surface, but there are other things. Immense as the Canal is, only by the closest watching may it operate without friction.

The Gatun Lake must be maintained at a constant level, and to accomplish this a chief hydrographic officer is on constant duty. Mr. Kirkpatrick is responsible for the water in the lake. Mr. Kirkpatrick is a graduate of the Iowa State College at Ames and a former engineer with the Clinton Bridge & Iron Co., can account for every drop of water in Chagres River and in Lake Gatun—a lake covering 156 or more square miles. Through the courtesy of Mr. Kirkpatrick, we visited Alahajinella, several miles above the lower rapids of Chagres River. We went by the Panama railroad to Gamboa and by gasoline launch as far as the water sets back by the Gatun dam, then changed from the launch to cayucas—a canoe-like boat hollowed out of a single log, about thirty feet long and three feet wide, propelled by two natives standing on the forward end of the cayucas, armed with strong poles shod with steel and one man with a pole at the rear end to guide the cayuca. It is hard work to force the boat up the rapids over a stoney bed, but the natives are skilled in this method of navigation and are stout men. The Chagres is a riotous river and will sometimes rise thirty feet in a few hours from heavy rains far up in the continental divide,

and must be watched. Mr. Belljam, a Jamaica or Martinique native of a watchful eye and brain, lives at Alahajinella and watches the river.

On a precipitous bluff there is provided a well reaching low water, with a float attachment with a ribbon over a pulley, very sensitively arranged, connected with an electric wire. If at night the river rises and Belljam is in bed, a warning signal is given and he is roused, and, lying in bed, may watch the rise in the river and if the river threatens, he telephones to the man in charge of the spillway gates at Gatun, and another gate is opened and the lake kept at the proper level. There is also a small reservoir exposed to the sun, as is the lake, and the rapidity of evaporation determined and recorded. There is also an apparatus that shows the direction and rate of wind. Mr. Kirkpatrick has on his table in his office at Ancon, apparatus that determines the will of the Almighty in relation to rain and water at all hours of the day and night. We may be assured that neither Mr. Holloway or Mr. Kirkpatrick will be taken by surprise.

We had the good fortune to witness the emptying of one of the lock chambers to observe what was going on ninety feet below. It leaves a big hole 1000 feet long and 110 feet wide. About once in three years the teredo eats out the sills of the gates and it is necessary to put in new sills, notwithstanding that the hardest wood possible to be obtained is used; even the lead tubes that carry the electric wires are eaten into, the insulation destroyed, resulting in short-circuiting. Mr. Holloway thinks that concrete or iron may be used, but the objection appears to be that wood is better, in that it is more elastic and be less disturbed by the jar incident to closing the immense lock gates.

The Oregon State Medical Association has raised its annual dues to \$20.00.

At a recent meeting it was voted that the League for Conservation of Public Health should be absorbed and replace the Committee on Public Health and Sanitation and it was voted to employ one paid secretary for both organizations.

Referring to the activities of the State Association the editorial states; "already medical defense is conducted by the Association for the benefit of all its members. In order that all these Association interests may be properly financed, it was voted to place the annual dues at twenty dollars per member."

It is anticipated that it is probable that there will be a temporary decrease in membership in consequence of increased dues, but that the benefits that will accrue to members will more than

compensate for the increased expenditure. "It is already reported that a number of County Societies have endorsed the measure and it is expected the same course will soon be generally followed."

The principal argument offered for increased dues is in support of medical defense, which is an important activity in medical organization. There has been for several years an increasing tendency to hold the Doctor responsible for the results of his treatment. The old time family physician was forgiven many of the results which now lead to a suit for malpractice.

"Medical defense has of recent years been adopted by many of the state associations. At first it was maintained by dues paid by the members who appreciated its benefits through personal experience with its results. Since it has been demonstrated that every malpractice suit successfully defended confers protection on all members of the profession, and the existence of such defense has proven effective in greatly reducing these malpractice suits, it has seemed just and reasonable that all members of the association should participate in the necessary expenses of this defense fund. Accordingly some of the associations have adopted this as one of its liabilities. More recently the public health league has functioned as an important factor in health and sanitary matters in our Western states. At the outset this league was supported by contributions on the part of a few liberal minded and far seeing members. It has existed a sufficient length of time to demonstrate its benefit to the medical profession and the general public. Since every member of the profession participates in the advantages of its activities, it would seem that its maintenance by the state association might well be considered."

The Iowa State Medical Society has paid its attorneys' fees for the past fifteen years, from \$2,500 on to \$4,000 annually, for defense of its members, and to its Defense Committee a few dollars for postage only. We are now in favor of the Oregon suggestion of a liberal salary for the immense work that that has been performed for the good of the profession?

Why are so many eligible physicians outside the county or district medical societies?

The Journal-Lancet of Minneapolis, has been making some inquiries on this subject. Friendly inquiries revealed the following reasons:

1st. The Society is run by a clique for self advertisement.

2nd. Benefits do not pay the cost of membership.

3rd. The Society is not interested in me.

4th. The papers are read mainly by specialists and of no interest to the general practitioner.

5th. Dues are too high.

6th. Legislative and protective benefits are nil.

7th. Commercialism, not ethics, govern the Society.

These reasons do not appear to the Editor of the Journal-Lancet as sufficient.

IOWA STATE UNIVERSITY NEWS NOTES

Don M. Griswold, M.D.

Miss Josephine Creelman, superintendent of nurses, University Hospital, recently attended the annual meeting of the National League of Nursing Education at Swampscot, Massachusetts.

Mary C. Wheeler of the Illinois School for Nurses, is giving a course in the summer school in nursing administration. This course was given in response to many letters of the medical faculty inquiring for nurses with administrative training in hospital work. Thirty-five students are enrolled in this session and it is expected that this course will be given each summer.

The class in training school for nurses which will enter September 24 is more than half full at the present time. Classes are entered at the beginning of each semester of the college year in order to integrate the practical work in the hospital with the courses taken by the nurses in university classes.

Dr. and Mrs. F. W. Mulsow were called to New Hartford, Iowa, by the death of Mrs. Mulsow's father, Mr. Henry Emery. Dr. Mulsow is acting head of the department of pathology and bacteriology of the College of Medicine, S. U. I.

Mr. Frank Boyd, freshman in the college of medicine and Miss Joanna Pettit, sophomore in the college of Liberal Arts were married at the Presbyterian church, Iowa City, May 24. They will resume their college work in the fall.

Dr. and Mrs. Lee Wallace Dean were summoned to Philadelphia to the Hill School where their son Wallace, aged sixteen, was badly hurt. The boy was injured by a baseball which struck him in the face, breaking the nose. Later infection developed.

Dr. and Mrs. Thomas P. Treynor and daughter Adeline Marie have left Iowa City for Council Bluffs and Omaha where they will remain until June 25, when Dr. Treynor who has just completed his course

in the college of medicine at the State University of Iowa, will leave for Detroit, Michigan, where he will take his internship.

Dr. Don M. Griswold of the department of preventive medicine and hygiene recently addressed the staff of St. Anthony's Hospital at Moline, Illinois, on "Some Recent Advances in Diphtheria Prevention."

Word has come to the University of Iowa of the death of Miss Mary C. Haarer at Ann Arbor, Michigan, June 10, 1923. The cause given was carcinoma. Miss Haarer was from 1916 until January, 1922, superintendent of the nurses' training school of the State University of Iowa, in which position she was in every way an efficient and competent leader and superintendent. After leaving the nurses' training school she was for a time in the University of Michigan at Ann Arbor. Then early in 1923 she accepted a position as inspector of the training school for the city of New York. On account of ill health, however, she was forced to relinquish this position and return to her old home at Ann Arbor where she was when she died.

Dr. T. B. Gay of the extension division of the State University of Iowa supervised a clinic in May under the Sheppard-Towner Maternity Law. Dr. Gay is a new member of the extension division, a pediatricist from Johns Hopkins.

Announcement has been received of the wedding of Miss Avo Dovbenmier of Cedar Rapids and Mr. Harold Townsend of Sac City on May 18. Mr. Townsend will be a senior in the college of medicine, State University of Iowa, this coming year.

Miss Margaret Dolliver of Fort Dodge and Dr. Walter Anneberge of Carroll were married at Fort Dodge June 17. Dr. Anneberge received his degree of doctor of medicine from the Iowa State University in June this year. They will make their home in Iowa City after July 1.

SOCIETY PROCEEDINGS

Boone County Medical Society

The Boone County Medical Society met Friday evening, June 1, in the B. P. O. Elks club rooms. Dr. A. B. Deering gave a report of the transaction of the House of Delegates of the Iowa State Medical Society, recently held at Ottumwa. T. L. Ashford told of the needs of the county hospital. Dr. J. O. Ganoe of Ogden discussed the health program from the physician's standpoint, and Miss Emma McCall talked upon the health problem from the nurses standpoint. Drs. M. A. Healy and R. D. Cruikshank were named a committee on arrangements.

Fayette County Medical Society

Fayette County Medical Society met on the lawn in front of the hotel at Donnan and held a well attended and interesting gathering.

The occasion was taken to elect officers, the same officers having served for a considerable length of time. The new officers are as follows: President, Dr. J. M. Smittle of Waucoma; vice-president, Dr. P. J. Wood of Wadena; secretary, Dr. C. C. Hall of Maynard.

Papers were read by Dr. Risk of Oelwein on Early History of the Medical Profession in Fayette county, and by Dr. Hall of Maynard on "Case History."

On invitation of Dr. P. J. Wood, the place of the next meeting was fixed for Wadena, three months hence, as the meetings are held quarterly.

Fayette County Medical Society

A joint conference was held of the Fayette County Medical Society and the County Health Association, June 12, at Oelwein.

Linn County Medical Society

Dr. J. Lynn Crawford was elected president of the Linn County Medical Society at a meeting held at the Montrose Hotel, Tuesday evening, May 29.

Other newly elected officers include Dr. J. W. Nefolicky, vice-president; Dr. W. H. Redmond, secretary; Dr. B. L. Sheldon, treasurer; Dr. H. M. Ivins, Dr. A. R. Zuercher, delegates to state convention; Dr. C. T. Houser, Dr. John Redmond and Dr. W. J. Neuzil, censors.—Cedar Rapids Republican.

Marshall County Medical Society

Marshall County Medical Society (social meeting) was held at the Elmwood Country Club Thursday evening, June 28, 1923. Dr. and Mrs. R. E. Keyser and Dr. and Mrs. M. N. Chesire were hosts and hostesses. Eighty-nine guests were present. After a four course dinner, a social program was held.

Doctors and their wives from out of the city were: Dr. and Mrs. I. D. Kauffman, State Center; Dr. and Mrs. M. H. Thielen, Dr. and Mrs. W. O. McDowell, Grundy Center; Dr. and Mrs. H. Kahler, Reinbeck; Dr. and Mrs. F. T. Launder, Garwin; Dr. and Mrs. L. E. Noble, Rhodes; Dr. and Mrs. K. E. Fee, Dr. and Mrs. C. W. Maplethorpe, Toledo; Dr. and Mrs. O. E. Koeneman, Eldora; Dr. and Mrs. L. H. Ferris, Dr. and Mrs. B. M. Rowland, Melbourne; Dr. and Mrs. E. M. Mills, Dr. and Mrs. W. W. Southwick, Le Grand; Dr. and Mrs. H. H. Ennis, Baxter, Dr. and Mrs. A. G. Glann, Colo.

Page County Medical Society

Page County Medical Society met in Shenandoah, Iowa, at the Henry and Catherine Hand Hospital, on June 7, 1923, at which time Dr. E. H. Clark gave a most interesting and instructive paper on "Goitre in Infants," in which he presented a recent case of a baby boy born with a large thyroid gland. The

Doctor made good use of the state medical library in preparing his paper and spoke very highly of their efforts to assist.

Special picnic session of the society will be held in Clarinda on September 6, at which time Dr. F. E. Sampson of the Field Activities, will be our guest and lecturer.

J. F. Aldrich, Sec'y-Treas.

Palo Alto County Medical Society

The Palo Alto County Medical Society met at the Palo Alto Hospital, Emmetsburg, May 23, 1923.

The meeting was called to order at 3 p. m. by the president, Dr. J. Hennessy, who presented a paper on Medical Practice.

Dr. Nelson of Ayrshire read a paper on Insulin in the Treatment of Diabetes.

Dr. Brereton reported a case of Perforated Gastric Ulcer operated upon at Palo Alto Hospital, with recovery.

Dr. Keeney of Mallard, presented two cases Aerodynia.

The following members were present: Drs. Petty and Keeney, Mallard; Drs. Houston and Mock, Ruthven; Dr. Nelson, Ayrshire; Dr. Woodbridge, Cylinder; Drs. Powers, Cretzmeyer, Brereton and Hennessy, Emmetsburg; Dr. Oscar Doyle Lindstrom of Minnesota.

Des Moines Valley Medical Association

The fiftieth annual meeting of the Des Moines Valley Medical Association was held Thursday, June 21 at Ottumwa.

The program was as follows:

Morning—Surgical Clinic, Ottumwa Hospital, Dr. D. C. Brockman, Ottumwa.

Medical Clinic, Ottumwa Hospital, Dr. Granville N. Ryan, Des Moines.

Surgical Clinic, St. Joseph Hospital, Dr. J. C. Masson, Mayo Clinic, Rochester, Minnesota.

Noon luncheon at Hotel Ottumwa, Dr. A. O. Williams, toastmaster.

Five minute discourse, Why a Doctor Should not Toot His Own Horn, Dr. C. H. McGee, Burlington.

Five minute discourse, Why a Doctor Should Toot His Own Horn, Dr. C. B. Taylor, Ottumwa.

Five minute discourse, It is Proven that We Shall Toot or not Toot, Dr. K. L. Johnson, Oskaloosa.

Afternoon—2:00 at the court house—

Reading of the minutes of the first meeting of The Des Moines Valley Medical Association, January 7, 1873, in memorium to those, none of whom are now living, who founded this association a half century ago.

Trichiniasis (with report of three cases now under treatment), Dr. Granville N. Ryan.

Uterine Prolapse and its Treatment (with lantern slides), Dr. J. C. Masson.

Acute Infection of the Upper Abdomen, Dr. D. C. Brockman.

Officers—President, Dr. S. W. Clark, Oskaloosa; first vice-president, Dr. J. A. Replogle, Udell; second vice-president, Dr. A. P. Johnson, Sigourney; secre-

tary and treasurer, Dr. W. E. Anthony, Ottumwa. Board of Censors—Dr. M. Bannister, Ottumwa; Dr. E. C. McClure, Bussey; Dr. S. A. Jenkins, Albion.

Wall Lake District Medical Society

The Wall Lake District Medical Society comprising Ida, Sac, Crawford, Calhoun and Carroll counties met at Wall Lake Thursday, June 21.

Program—Afternoon Session 1:30 p. m. sharp.

Meeting called to order by President J. H. Stalford, Sac City.

Address of Welcome—Hon. R. B. Howard, Wall Lake.

Response—Dr. O. W. Wyatt, Manning.

Anesthesia—Dr. Eleanor Hutchinson, Rockwell City. Discussion opened by Dr. W. M. Shirley, Carroll, and Dr. J. J. Mehan, Denison.

Prevention of Disease—Dr. Jessie B. Hudson, Carroll. Discussion opened by Dr. G. H. Swearingen, Sac City, and Dr. G. C. Moorhead, Ida Grove.

Medical and Surgical Work in the "Zone of Advance in the World's War"—Dr. L. E. Eslick and Dr. J. N. Hoit, Rockwell City.

Diphtherial Complications—Dr. M. M. Loomis, Mankato. Discussion opened by Dr. H. D. Jones, Schleswig, and Dr. J. H. Hovenden, Laurens.

Rheumatism of Childhood—Dr. Channing E. Wolfe, Coon Rapids. Discussion opened by Dr. Stillman, Odessa, and Dr. G. S. Stoakes, Battle Creek.

Report on the Insulin Treatment of Diabetes—Dr. C. C. Bowie, Carroll. Has Insulin taken the "die" out of diabetes? Has medical science at last conquered this ancient enemy? Drs. Bowie and Pascoe of Carroll have treated several patients with Insulin and will give us some first hand information about the same. Discussion invited.

Syphilis from the Country Practitioner's Standpoint—Dr. A. H. Bullock, Cushing. Discussion opened by Dr. P. W. Van Meter, Rockwell City and Dr. L. G. Patty, Carroll.

The transplantation of Human, Monkey and Goat Glands into the Human Body—Dr. Emil C. Junger, Soldier. Is rejuvenation possible? Can the span of life be indefinitely prolonged? Will an era arrive when man need not prepare for death? Discussion free for all.

Banquet at 6:00 p. m., Methodist Episcopal church. Social hour 7:00 to 8:00 p. m.

Address—Dr. William Jepson, Sioux City.

Dr. Jepson, who has spent the greater part of his life teaching, naturally views a larger part of the medical profession of Iowa as former pupils, and has consented to give us a lecture from this viewpoint.

This will be a lecture of intense interest upon question vital to all by a man who knows his subject and is qualified to speak with authority.

Officers—President, J. H. Stalford, Sac City; vice-president, H. L. Fobes, Auburn; secretary, L. H. Jones, Wall Lake; treasurer, G. C. Moorhead, Ida Grove.

HOSPITAL NEWS

The Dubuque Hospitals held a third annual National Hospital Day Saturday, May 12, the institutions participating being St. Joseph's Mercy Hospital, Finley Hospital and Sunnycrest Sanitarium.

The cornerstone of the new addition to Mercy Hospital at Cedar Rapids was laid May 23, 1923. The Most Reverend J. J. Keane, Archbishop of Dubuque diocese, officiating. The addition is to cost \$250,000.

The Iowa Conference of the Methodist Episcopal Church has adopted a resolution to raise \$275,000 to enlarge St. Luke's Hospital, Cedar Rapids, which the Methodist Church took over some time ago.

Dr. J. P. Cress has just opened his new hospital at Ellsworth. It is one of the neatest hospitals in this section of the country.

MEDICAL NEWS NOTES

Canada is to give Dr. F. G. Bunting, discoverer of the insulin treatment for diabetes, an annuity of \$7,500. Thus a very able scientist will be enabled to devote his life to medical research. It is in marked contrast to the usual way in which America and Great Britain have treated their medical pathfinders, and indicates a desirable advance.

Former service men held a meeting and served a supper at Hotel Ottumwa, May 10, under the direction of Dr. J. F. Herrick.

PERSONAL MENTION

Dr. John H. Peck of Des Moines was chosen commander succeeding Dr. J. F. Herrick of Ottumwa and Dr. W. S. Conkling, also of Des Moines, was elected adjutant, with headquarters at the state house, of the Military Surgeons of Iowa at their meeting at Ottumwa. Dr. L. D. James of Fairfield was chosen trustee.

Dr. Frank C. Mehler of New London celebrated the seventy-eighth birthday anniversary May 15 with a dinner in the Hotel Burlington, at which a number of Burlington doctors were his guests. The event was a most delightful occasion and many congratulations were tendered Dr. Mehler by his guests and multitude of other friends. Those present at the dinner were: Drs. Young, Patterson, Frantz, Sherman, Crowe, Wehman, Moerke, La Force, Kaufman, Milligan and Tombaugh.

Dr. David Mitchell Blum, who recently returned from Europe, where he studied in hospitals in Switzerland and Germany, has opened an office at 611 Flynn building, Des Moines. Dr. Blum is a graduate of Rush Medical School and took his internship at Michael Reese Hospital at Chicago.

Dr. L. W. Larson of Minneapolis, a graduate of University of Minnesota School of Medicine, has located in Northwood, where he has formed a partnership with Dr. L. G. Hewitt.

Dr. Oliver Fisher of Onawa has donated his valuable laboratory to the Sioux City Board of Health.

Dr. Wilton McCarthy of Des Moines is spending several weeks in Boston, where he will devote his time to rest and the treatment of his partially disabled arm.

Dr. Wilhite, former superintendent of Dunning institution, a large insane hospital maintained by Cook county, Illinois, has formally taken over the superintendency of the Veterans Hospital in Knoxville, relieving Colonel Barlow, who has been transferred to Fort Sheridan, Wyoming. Dr. Wilhite was at one time superintendent of the old Inebriate Hospital in Knoxville, where he served for a year. Leaving Knoxville in 1906 Dr. Wilhite went to Chicago. For five years he was at Glendenning Hospital and later to the Dunning Institution. Since leaving Knoxville Dr. Wilhite has taken post-graduate work in neuropsychiatry after which he had experience in a private sanitarium. At the outbreak of the World War Dr. Wilhite tendered his services to the country and was assigned to Hospital No. 42, at Perryville, Maryland.

Dr. E. A. Chatterstrom of Davenport, sailed from New York April 26 for Gothenburg, Sweden, and will study medical affairs in Europe.

Dr. John R. Byers of East St. Louis, has located in Fonda, taking up the practice of the late Dr. Whitney.

Dr. B. M. Ghrist of Ames, was elected president of the Iowa X-Ray Club at Ottumwa.

Dr. A. C. Brown, formerly of Stuart, has moved to Council Bluffs.

Dr. B. A. Wolverton, a graduate of the University of Iowa School of Medicine, has located at Vinton and will form a partnership with Dr. J. E. Luckey.

Dr. J. J. Noonan, Jr., has located in Marshalltown. Dr. Noonan is a graduate of Rush Medical College and was associated with the Mayo Clinic for three years.

Dr. I. M. Soper of Anita, has formed a partnership with Dr. I. F. Crosby at Stuart. Dr. Soper formerly practiced medicine and surgery at Grand Island, Nebraska.

Dr. S. C. Mulholland, formerly of Mayo Clinic, will take charge of the department of children's diseases at the Physician's Clinic at Ft. Dodge. Dr. Mulholland is a graduate of the University of Minnesota; received post-graduate work in New York City and at the Mayo Clinic. He will take charge of the work of Dr. Russell, who recently resigned and is now studying in Europe.

Dr. H. E. Meyer, formerly of the Hampton Clinic, has located in Mason City.

Dr. C. H. Lander of Grinnell, will move to Los Angeles, and Dr. W. F. Crow of Pella, will take over Dr. Lander's practice and continue in the specialty of eye, ear, nose and throat.

OBITUARY

Dr. Guilford H. Sumner, for many years secretary of the state board of health and widely known in medical circles throughout the nation, died suddenly May 5 at 4:30 at the home of Avery McCune, 1530 West Ninth street, Des Moines. Death was due to a cerebral hemorrhage.

Dr. Sumner was a widower. His only living relative is a son, A. D. Sumner of Washington, D. C., who has been notified of his father's death. Mrs. Sumner died about ten years ago.

Dr. Sumner was secretary of the state board of health for twelve years by successive appointments of Governors Carroll, Clarke and Harding. He was a graduate of the medical college of the State University of Iowa, and practiced his profession before coming to Des Moines from Waterloo.

Death came to Dr. Sumner within a few hours after he became ill. Mrs. McCune said he came down to breakfast complaining of a headache. He went back to bed, growing worse. About 11 o'clock a physician was called. Dr. Sumner became unconscious at 12:30 and died without regaining consciousness at 4:30.

He was sixty-six years old last Armistice day, November 11.

Dr. Sumner was born at Marengo, Illinois, in 1856. He came to Iowa in the early seventies and taught school in Delaware county and at Manchester, Iowa, for a number of years. He graduated from the medical college of the University of Iowa in 1882. He made his way through college by teaching school. After graduation he began the practice of medicine in Waterloo.

He was an active member of the Masonic order, having attained the thirty-second degree. He was a Knight Templar and a Shriner.

Resolution

Be it resolved, that the Iowa State Board of Medical Examiners, in regular session assembled this 28th day of December, 1921, that as secretary executive officer of the Iowa State Board of Health and Board of Medical Examiners, Dr. Gifford A. Sumner, who has occupied this office for twelve years, has been an able and efficient official and ideal official. He has brought the work of the board to a high plane and by his rigid honesty and devotion to the duties of his office, has increased the efficiency of the State Board of Health greatly.

That on severing his relation with the board we commend him for his uniform courtesy to all of us and the employees of the office and the health interests of the state and for business efficiency which he has installed in the office. We all know of his work as a municipal health officer before entering the work of secretary of the state board of health and as a practitioner of medicine.

(Signed) A. G. Field.

Dr. Louis J. Perkins, who recently died at his home in Lewiston, Oregon, was born at Utica, Iowa, March 12, 1866, and graduated from the State Normal School at Dexter, Iowa. Studied medicine, and graduated from the Keokuk Medical College and practiced a short time in Des Moines. In 1895 he located near Pendleton, Oregon, and when the Spanish American War broke out, he enlisted in the Oregon Regiment and was sent to the Philippine Islands. He returned to Pendleton for a short time and then went to Washington, D. C., to become connected with the pension bureau. In 1903 he located in Lewiston, where he practiced until the time of his death.

He served with the 80th and 88th Divisions in France during the World War, from August, 1918, until July, 1919, when he was mustered out as a captain.

Dr. Theodore Engle of State Center, died at his home June 29, 1923, of malignant disease of the bladder.

Dr. Engle was one of the best known physicians in central Iowa. He was born in Benton Ridge, Hancock county, Ohio, March 11, 1856. Graduated from the medical department University of Michigan in 1875 and from the Missouri Medical College in 1888. Practiced medicine in Newton four years and moved to State Center in 1880. He was at one time associated with Dr. C. W. Coe. Several years later formed a partnership with Drs. Kauffman and Wood. During the past eight years he has been associated with Dr. A. D. Woods in conducting the Englewood Hospital.

Dr. Thomas C. Alexander of Oakland, died June 2, 1923, at the age of eighty-four years. Dr. Alexander was born in Union County, Indiana, September 25, 1839. Enlisted as a private in Fourth Iowa Volunteer Infantry and was mustered out of the service at Louisville, Kentucky, August 20, 1865.

Soon after the close of the Civil War studied medicine and graduated from the Eclectic Medical College, Cincinnati, and located in Big Grove (now Oakland).

Dr. Henry E. W. Barnes, formerly of Creston, died at his home in Santa Ana, California, May 31, 1923, at the age of seventy-three years.

Dr. Barnes was born in Marshall County, Illinois, April 4, 1850. Graduated from the medical department of Iowa State University March 5, 1873. Located in Creston, 1892, where he practiced medicine until 1907, when he moved to Santa Ana, California.

During his residence in Creston he was an active member of the Iowa State Medical Society. It was through the influence of Dr. Barnes that the State Medical Society met in Creston in 1895.

Dr. Barnes was an unique character. He belonged to a generation of doctors that was able to maintain an active interest in discussions of various subjects.

Dr. Nathan Freemont Hawk died at his home in Marathon, Iowa, May 17, 1923. He was born in Champaign County, Illinois, July 29, 1858, and lived there with his parents until he was about nineteen years of age, when he went west to Oregon. He returned to Iowa again in 1888. In 1892 he was married to Margaret O'Haire at Sioux City, Iowa, and to this union three children were born.

Dr. Charles D. Roome died at his home on Elm street, Cresco, May 31, 1923, seventy-nine years of age. He had been a practicing physician in Cresco for over forty years.

The deceased was born at Wallacetown, Kent county, Ontario, Canada, November 12, 1843. His father, William Roome, of British descent, and his mother, Kate McClane, from Scotland, had settled there in a very early day. Dr. Roome as a young man taught school, coming at that time to the United States. On coming to the states he entered the medical school at the University of Michigan staying there two years, then going to Rush Medical School, finishing there. After graduation he practiced at Dayton, Wisconsin, for two years, then at Ridgeway, Iowa, for nine years and in Cresco for forty years.

Dr. Ira J. Magee of Waterloo died at his home June 1, 1923, from pneumonia of but a few days' duration.

Dr. Magee was born February 21, 1889, on a farm in Bennington township. He received his early education in the schools of Dunkerton, later attending school at Cedar Falls. He was graduated from a four-year medical course at Northwestern University, Chicago, Illinois.

After completing the general course at Northwestern served as an interne in the Michael Reese Hospital, Chicago, and later took special work on diseases of the eye, ear, nose and throat at Chicago.

He was associated with a prominent specialist for four years in Chicago before he enlisted for service in the World War. He was overseas more than a year and in service twenty-one months, attaining the rank of captain.

Dr. Magee was married to Miss Atlhea Eyers at Chicago shortly after being discharged from the army and came to Waterloo.

He was a member of the Iowa and Illinois State Medical Societies, of the Blackhawk County Society and Waterloo Societies. He also was a member of Becker-Chapman Post, American Legion.

Dr. George B. Shattuck died on March 13, 1923, at his home in Boston. Dr. Shattuck for many years was editor of *The Boston Medical and Surgical Journal*.

Dr. Shattuck was born in Boston in 1844. Some years ago he made a trip to Central Africa for the scientific study of the health and mode of living of primitive peoples.

MARRIAGES

Dr. Frank M. Keefe of Clinton and Miss Geraldine Kelly, also of Clinton, were married June 9, 1923.

Dr. Frank Theodore Hartiman of Waterloo and Mrs. Martha Pederson were married at Waterloo, June 27, 1923.

Dr. Ivan Ray Powers of Waterloo and Dorothea Herman of Boone, were married at the Herman home June 27, 1923.

Dr. Orr Falls of Wapello and Miss Evalyn Helland of Slater were married at Wapello July 4, 1923. Dr. Falls is a graduate from Western Reserve College of Medicine, 1920.

Dr. Howard Lull Van Winkle of Cedar Rapids, pathologist and bacteriologist of St. Luke's Hospital, and Miss Josephine Krause, also of Cedar Rapids, were married at Cedar Rapids June 29, 1923.

BOOK REVIEWS

TEXT-BOOK OF PEDIATRICS

Edited by Professor E. Feer, Director of the University Children's Clinic, Zurich. Translated and edited by Julius Parker Sedgwick, B.S., M.D.; Professor of Pediatrics, University of Minnesota Medical School and Carl Ahrendt Scherer, M.D., F.A.C.P., Duluth, Minnesota; 262 Illustrations; First Edition. J. B. Lippincott Company. Price 8.50.

This book of 917 pages is the product of a group of German and American pediatricians, or more properly, by a collaboration of a group of German pediatricians, edited by a group of American pediatricians.

This is a translation of the seventh German edition which has met with great favor in Germany and which led a group of Americans to edit an English translation.

The work is introduced by a consideration of Anatomic and Physiologic Peculiarities prepared by Martin Thiemich, Leipzig. Revised and edited by Dr. R. E. Scammon, professor of anatomy University of Minnesota Medical School, Minneapolis. The first part consists of General Considerations, of which the introduction is as above stated. Following are four other points of General Consideration; one, General Prophylaxis, revised and edited by Dr. Albert Byfield of Iowa City, professor of pediatrics, College of Medicine University of Iowa. The second, Care and Feeding of the Normal Infant, General Consideration, revised and edited by Julius H. Hess, Chicago, professor and head of the department of pediatrics, University of Illinois College of Medicine.

Special part, section one, Diseases of the New-Born, by Professor Heinrich Finkelstein and Dr. Ludwig Meyer of Berlin. Revised and edited by Dr. Naboth Osborn Pierce, assistant professor pediatrics University of Minnesota Medical School. Under this head are twenty-nine subjects relating to the new-born.

Section two, Pathological Changes of the Blood and Blood-forming Organs, including Constitutional Anomalies and Diseases of Metabolism, by Professor von Pfaundler, director of the University Children's Clinic, Munich. Revised and edited by Dr. M. D. Ott of the University of Minnesota Medical School, Minneapolis. Under this section are grouped some forty-six subjects.

Section three, Diseases of the Digestion, by Finkelstein and Meyer. Revised and edited by Joseph Brennemann of Chicago.

Section four, Diseases of the Respiratory System, by Professor von Pirquet of Vienna. Revised and edited by Walter H. O. Hoffman of Chicago.

Section five, Diseases of the Heart, by Professor E. Feer, director of the University Children's Clinic, Zurich, Switzerland. Revised by Dr. Henrietta Calhoun, University of Iowa School of Medicine.

Section eight, Acute Infectious Diseases, by Prof. Feer. Section nine, Tuberculosis, Prof. von Pirquet, Vienna. Section ten, Syphilis, by Prof. Moro, director of University Children's Clinic, Heidelberg. Section eleven, Diseases of the Skin, with supplement by Professor Moro of Heidelberg.

We have only space to include the names of authors who are so well known in America, and a few of the American pediatricians who have revised and edited the German text. Much credit is due Lippincott Company in encouraging the translation and revision of this extremely valuable work to make it accessible to American physicians. We feel sure the medical profession will appreciate the value of this book.

DISEASES OF WOMEN

By Harry Sturgeon Crossen, M.D., F.A.C.S., Clinical Professor of Gynecology, Washington University Medical School, and Gynecologist-in-Chief to the Barnes Hospital and the Washington University Dispensary; Gynecologist to St. Luke's Hospital, Etc. Fifth Edition, Revised and Enlarged, with 934 Engravings, Including One Color Plate. C. V. Mosby Company, St. Louis, 1922. Price \$10.00.

Dr. Crossen and the publishers have been very fortunate in this book and the good fortune has been based on the excellence of the work and the high character of the mechanical execution which has brought out the merits of the fine illustrations which constitute so important a feature of the book. Since the last edition, some important additions have been made in the diagnosis and treatment of gynecologic conditions which have been evaluated in this edition, particularly in relation to x-ray and radium in the treatment of malignant diseases of the pelvis organs. Endocrinology has an important relation to diseases of women. It may be admitted, however, that there are many unsettled questions in regard to the internal secretions, but in chapter 15 by Dr. Hugo Ehrenfest, a discussion is presented on this

subject which will show what our present knowledge is on the influence of the endocrine glands on gynecologic conditions. There can be no doubt that these glands exercise a profound influence at certain periods of a woman's life and it is important that the profession should have as full knowledge as possible from those having wide opportunities for observation.

THE HEART IN MODERN PRACTICE, DIAGNOSIS AND TREATMENT

By William Duncan Reid, A.B., M.D., Chief of Heart Clinic at the Boston Dispensary, Junior Assistant Visiting Physician and Member of the Heart Service, Boston City Hospital; 32 Illustrations. J. B. Lippincott Company.

Dr. Reid has prepared a very useful book for the practitioner of medicine. It is divided into five sections. The first section relates to general considerations. Section two, Types of Heart Disease. In view of the fact that the book is intended for the general practitioner, this section will be found most important.

The first type presented is a discussion of Rheumatic Infection of the Heart. This term is more satisfactory to the author than endocarditis, mitral stenosis, pericarditis, etc., which are individual manifestations of the same infection. The rheumatic origin of heart disease may be present even though there is no history of a rheumatic infection. The identity of the invading organism is not known but would appear to be a modified septicopyemia, probably related to chorea, tonsillitis or infected teeth. The discussion of this type is interesting and instructive.

Septic heart disease is regarded as a form of rheumatic heart disease in which the attacking organism is more virulent. The diagnosis is difficult and the disease is generally fatal. Cardiovascular syphilis receives considerable attention. According to the Massachusetts General Hospital Reports, sixteen years was the average period elapsing between the primary lesion of the leucic infection and the appearance of symptoms of circulatory disease.

Following the discussion of syphilitic cardiovascular disease comes a series of interesting types: Arteriosclerotic Heart Disease; Hypertension Heart Disease; The Heart in Hyperthyroidism; The Heart in Diphtheria. Then comes cases of Congenital Heart Disease; Effort Syndrome; Irritable Heart.

Section three: Functional Conditions. The most important being Angina Pectoris; on account of the fact that authorities are not agreed as to the pathological cause of angina pectoris, the author discusses the leading theories. At the end of the discussion is, "not proven."

Another type, the Arrhythmias receives interesting consideration. We are informed that arrhythmias are not true entities in the sense that are rheumatic heart disease, cardiovascular syphilis, etc., but are

functional conditions which may be features of various heart affections.

Section four presents structural lesions. Section five relates to treatment, etiological treatment, general treatment, drug treatment, followed by an appendix presenting illustrative cases.

NUTRITION OF MOTHER AND CHILD

(Lippincott's Nursing Manuals). C. Ulysses Moore, M.D., M.Sc. (Ped.), Instructor in Diseases of Children, University of Oregon Medical School; Including Menus and Recipes; by Myrtle Josephine Ferguson, B.S., B.S., in H.Ec., Professor of Nutrition, Iowa State College, Ames, Iowa. Price \$2.00.

The important discoveries in nutrition made during the past five years have revolutionized our ideas of dietetics. This volume presents the facts of nutrition which have been accepted by schools of accredited standing everywhere. The book lays particular emphasis on the newer conception of breast feeding, the building up of breast milk, vitamins and the mineral content of the diet. Nothing is included which has not been tested and proven of practical value in personal experience. The volume is written in simple straight-forward English and as untechnical as is feasible in the presentation of scientific facts. It is so arranged that it may be employed by nurses and social workers for instruction of mothers in the homes and in conducting short courses in nutrition.

Contents—Former Knowledge of Nutrition; Newer Nutritional Knowledge; The Three Known Vitamins; Rickets; Diet During Pregnancy and Lactation; Breast Feeding; Development of Breast Milk; Care and Feeding of the Premature Infant; Diet from Six to Twenty-four Months; Artificial Feeding; Diet for Older Child; Faulty Diets; Some Common Fallacies in the Care and Feeding of Children; Appendix; Index.

THE MEDICAL CLINICS OF NORTH AMERICA

Volume VI, Number 5 (March, 1923), by Ann Arbor Internists. Octavo of 273 Pages and 22 Illustrations. Price Per Clinic Year, July, 1922 to May, 1923. Paper, \$12.00; Cloth \$16.00 Net. W. B. Saunders Company.

This extremely important number which contains so many valuable contributions presents first a clinic by Dr. Louis M. Warfield, under the title Hodgkin's Disease of the Mediastinal Glands and Lymphosarcoma, followed by a clinic including cases illustrating the Use of High Fat Diet in the Treatment of Diabetes Mellitus, by Dr. L. H. Newburg, who admits that much has been written about the advantages of fasting, presents now the advantages of a dietetic regimen that allows sufficient calories to avoid the evil of undernutrition and will control the disease itself as effectively as the more rigorous plan, a matter worthy of serious consideration.

Dr. U. J. Wile presents some observations that

should be considered under the head of Cases Illustrating Some Contradictions to the Intensive Treatment of Syphilis.

Dr. Hugh Cabot presents a discussion under the unique title, *Those Painful Women*. It is an interesting title and likewise interesting reading, as might be expected from Dr. Cabot.

Psychopathic Personality, by Dr. Albert M. Barrett. This paper is full of interest. Our regret is that the paper is not longer, so much more might be said.

This number of Medical Clinics contains so much valuable material that we regret space will not permit us to notice all the general clinics, and particularly, a group of Pediatric Clinics, five in number, including Infectious Diseases.

The University of Michigan and Saunders Company are to be congratulated on this number.

THE MEDICAL CLINICS OF NORTH AMERICA Philadelphia Number

These two numbers constitute a volume in themselves, of great value, so well does one number supplement the other.

The first Clinic in the Philadelphia number refers first to Hypertension and Nephritis. Second, The Early Treatment of Empyema by Aspiration, by Dr. Thomas McCrea.

Dr. James N. Anders invites our attention to three cases of Cutaneous Discoloration, two of Addison's Disease and one Hemolytic Jaundice. These cases are considered together as illustrating points in diagnosis.

Dr. John H. Musser presents two Unusual Types of Leukemia.

Dr. Henry K. Mohler presents four cases, illustrating the Value of Basal Metabolic Studies in the Differential Diagnosis of Conditions Resembling Hyperthyroidism.

We have also a valuable contribution by Dr. C. C. Wolferth, under the title of Arterial Blood-Pressure in Heart Disease.

In a clinic by Dr. Chevalier Jackson of Jefferson Hospital, on Lung Suppuration caused by Prolonged Sojourn of Foreign Body; a bronchoscopic clinic by Dr. Jackson is always interesting. The clinic is continued by Drs. Lukens, Moore and Funk.

The last clinic we have space to mention is by Dr. Richard A. Kern on The Influence of Infection on Carbohydrate Tolerance in Diabetes Mellitus.

THE SURGICAL CLINICS OF NORTH AMERICA

Philadelphia Number; February, 1923.
Price \$12.00, Paper; \$16.00 Cloth. W. B. Saunders Company.

The first series of clinics by Dr. John B. Deaver include Irreducible Right Inguinal Hernia; Appendix and Cecum in Sac; Recurrent Acute Intestinal Obstruction; Multilocular Parovarian Cyst; Chronic

(Continued on Advertising Page xxii)

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BOOK REVIEWS

(Continued from Page 364)

Calculus Cholecystitis; Recurrent Cholelithiasis; Differential Diagnosis; Appendicitis vs. Acute Pancreatitis; Sub-acute Pancreatitis and Sequelae of Suppurative Appendicitis.

Dr. Charles H. Frazier presents Some of the Surgical Problems in the Management of Pituitary Disorders.

Dr. Astley P. C. Ashurst gives a clinic on Surgery of the Stomach.

Dr. T. Turner Thomas presents an interesting clinic, including a variety of cases. Dr. John Jopson also gives a rather large and varied clinic. A rather important contribution by Dr. Benj. Lipshutz on the Anatomic Variations and Surgery.

The number closes by a neurosurgical clinic by Dr. Charles H. Frazier and Dr. Francis C. Grant.

INFLAMMATION IN BONES AND JOINTS

By Leonard W. Ely, M.D., Associate Professor of Surgery, Stanford University; 144 Illustrations. J. B. Lippincott & Company, 1923. Philadelphia and London.

The title of this book at once invites our interest, so common and important are inflammation of bones and joints from a clinical point of view.

The author informs us in the preface that he has drawn from an abundant material in preparing this book. The first chapter devoted to General Considerations is full of interest and an attempt is made to interpret terms and conditions, even referring to elementary facts, to avoid confusion. It would appear that some differences of opinion have grown up in this way, especially in relation to the influence of the periosteum in the union of fractured bones. Where a real difference of opinion exists, the author undertakes to reconcile the difference.

The general surgeon and the student in surgery will find much helpful information in this chapter. This is particularly true in relation to ankylosis and the prevention and treatment of this condition. Much harmful advice is given in relation to motion when rest should be employed.

Chapter one, Acute Suppurative Hematogenous Osteomyelitis, is interestingly presented, as is also Acute Suppurative Hematogenous Arthritis. In both forms of disease early operative treatment is emphasized. Suppurative Osteomyelitis following Compound Fractures. Following, Typhoid Fever and other forms of infections are briefly considered.

Traumatic Arthritis, Suppurative Arthritis from Wounds, and Hemophilic Joints are also considered. Chronic Osteomyelitis from various causes are presented.

A considerable part of the book is devoted to Joint Tuberculosis, and includes an exhaustive account of tuberculosis as it appears in the various joints of the body. Under what is termed the Second Great Type of Chronic Arthritis are included: Hy-

perthropic Arthritis, Degenerative Arthritis, Osteoarthritis, Arthritis Deformans, Metabolic Arthritis, and Senile Arthritis, generally of unknown origin and termed by the author as the mysterious type of arthritis. Leg's Disease is also considered and also Loose Bodies in the Joint.

Dr. Ely has brought to the profession an interesting discussion of bone and joint disease which may be regarded as a valuable contribution to a form of disease common enough, but often neglected or badly treated.

PROPAGANDA FOR REFORM

Modified Pneumococcus Vaccine—A vaccine or "antigen" prepared by digesting a suspension of pneumococci, types I, II, III and Group 4 at 37 C. until about 95 per cent of the organisms have become gram-negative and the mixture is relatively non-toxic to guinea pigs. It is believed that this method yields a vaccine with greater protective power. There is some evidence that this vaccine is of value in the treatment of lobar pneumonia. It is not intended for prophylactic use.

Pneumococcus Antigen—Lilly—A modified pneumococcus vaccine—N. N. R. It is marketed in 5 c.c. vials, each c.c. containing twenty billion partially autolyzed pneumococci. Eli Lilly & Co., Indianapolis, Ind. (Jour. A. M. A., April 21, 1923, p. 1143.)

Sulpharsphenamine—Squibb—A brand of sulpharsphenamine—N.N.R. (See Jour. A. M. A., March 31, 1923, p. 919.) It is supplied in ampules containing respectively, 0.1 gm., 0.2 gm., 0.3 gm., 0.4 gm., 0.5 gm., and 0.6 gm. E. R. Squibb & Sons, New York City. (Jour. A. M. A., April 21, 1923, p. 1143.)

Neo-Silvol—A compound of silver iodid with a soluble gelatin base containing 18 to 22 per cent of silver iodid in colloidal form. Neo-silvol, even in concentrated solutions, causes neither irritation of mucous membranes nor coagulation of albumin. It does not stain the skin. It is claimed that neo-silvol in laboratory tests for germicidal value has been found as effective as phenol in its action on bacteria. Neo-silvol is intended for the prophylaxis against, and treatment of infections of accessible mucous membranes and is claimed to be indicated in affections of the genitourinary tract and of the eye, ear, nose and throat. Parke, Davis & Co., Detroit, Mich. (Jour. A. M. A., April 28, 1923, p. 1218).

Phenoltetrachlorphthalein—H. W. & D.—A di-basic dye formed by the condensation of phenol and tetrachlorphthalic acid or its anhydrite. Phenoltetrachlorphthalein has been used for the determination of the functional output of the liver. It can be used, in the form of the sodium salt, intravenously; but cannot be given subcutaneously or intramuscularly. The substance may also be obtained in the form of Ampules Phenoltetrachlorphthalein containing a solution of disodium phenoltetrachlorphthalein. Hynson, Westcott & Dunning, Baltimore, Md. (Jour. A. M. A., April 28, 1923, p. 1218).



EPPIE MCCREA, M.D.
PRESIDENT
STATE SOCIETY IOWA MEDICAL WOMEN
1922-1923

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No. 9

EFFICIENCY IN MEDICINE*

EPPIE MCCREA, M.D., Eddyville

Efficient medicine is the basis of our profession, but it cannot be made possible until the proper foundation is laid to support so high a standard. The most essential thing for this foundation is first of all, true men and women, whose supreme thought is human service. It must always be the endeavor of our profession to improve the quality of our work, and look toward advancement. We must give the people the best that medical science has to offer. By labor and unstinted energy in our practice, we can increase our skill—each in our own particular line of work, always being mindful of the interests of our patients, and the public welfare. We are thus enabled to gain, and hold the highest respect of the people. Better and ever better work on the part of the physician—whether he be general practitioner or specialist, is the main factor absolutely essential for efficient medicine, and this will require persistent effort and unstinted labor.

The pressing problem in medical education is to discover the latent possibilities in the beginner who seeks entrance to the profession, and to develop them. The duties of a medical school do not cease with the graduation of its students. Not only must they equip physicians well, but they must enable their graduates to keep up with the ever-changing and ever-progressing movements of the medical world. The laboratory is the study room of the practitioner who wishes to keep himself abreast of the most recent advancement in his chosen line of work. The clinics that are equipped to practice the most approved methods of diagnosis and treatment, must also point the way to the general practitioner.

Life, activity, and energy with indefatigable industry are the price paid for success. Too many are content to drift along, getting through life in the easiest manner possible. Inefficiency and inferiority are the result. Success and honor

come to those who will to do, overcoming every obstacle that may come their way. There is no "royal road" to success and fame. The road leads over rough and rocky paths and requires industry, constant attention to detail, and a steadfast inquiring mind to bring about efficiency. Intelligent effort and close attention will help to win, and the success of the best is the crowning proof that leaves no room for argument.

The welfare of a nation depends first and foremost upon the health and vigor of its people, who constitute its chief asset. To achieve this end the knowledge, skill and progressiveness of the medical profession, in its many lines of activity, are indispensable and invaluable. Marvelous advancement has been made during the past half century by the medical profession, and the future progress in the improvement of the health and the better physical condition of the people of this country will correspond in exact proportion to the advancement in medical knowledge, and to the increased application of this knowledge by the profession, especially the discoveries in preventive medicine.

Promptitude and thoroughness are qualities which go far towards success in any profession, but before these qualities can be brought effectively into play; it is all important that mistakes be avoided. Care and circumspection must be exercised and nothing taken for granted. Those who take these precautions will make few mistakes in the diagnosis and treatment of their patients. This will insure a successful career, while half hearted indifferent service leads to failure. We are all likely to make mistakes, and under no other circumstances may this be more excusable than in a busy practice, where time is valuable and much of the work is routine, but in these days when luster and superficiality are everywhere rampart, we should aim all the more at thoroughness and high grade work.

Of all the attributes that go to make up the worth-while members of our profession, the most important is the spirit of service. A dozen will fail because they lack the proper spirit, where one fails through lack of ability. Progress can

*Address of the President of the Society of Iowa Medical Women, May 8, 1923, Ottumwa, Iowa.

only be achieved through persistent force and persuasion, this tends to protect our profession, builds up a more complete organization, and gives unity of purpose. Prompt and efficient medical service to the ailing members of our population, as well as advice to those in health, to enable them to protect that health, is bound to prevent the development of numerous serious and more or less permanent lapses in the community health.

As a great building reflects the ideals and skill of its designers, and builders, so our profession is reflected by the support of all those who aim for the highest achievement, and are not content unless they reach the best results, and by their united effort keep the standard on the highest level. While few of the medical profession become wealthy, the honors of life are not lacking and are peculiarly open to them. Earnest, sober students, and industrious physicians have a lofty purpose, and the public expects them to hold to these high ideals. They are the custodians of the public health, preventing epidemics and the spread of disease, correcting deformities, and working for the welfare of humanity.

Attention must be called to the significance of symptoms as distinguished from physical signs; to the consideration of physiological pathology, as distinguished from anatomical pathology; to the disturbance of function, as distinguished from alteration in structure. We must become as expert in observing subjective symptoms, in classifying them and estimating their significance as we try to be in the study of the objective signs of disease. We must learn function and its aberrations as well as to know structure and its changes. This is the work of a physician to whom the patient comes with his first complaints; the tasks of the every day doctor, especially the physician in general practice. The greatest opportunity to improve our profession, lies with the family physician, for in spite of present-day tendencies to specialize in our fight against disease, the family physician has been and always will be more important than all the specialists combined. A large majority of people live and die without ever consulting a specialist of any sort; and proper guidance by the family physician must give them the needed service. Cooperation of a consultant with the family physician is often required to get desired results, and the best interests of the public may be served by cooperation in the profession.

Self reliance develops judgment and independence (rural practitioners are almost universally compelled to rely exclusively upon themselves). This self reliance can be obtained in no other

way. No instruction in the real art of practicing medicine can rival that obtained by coming in close contact with people, not only in sickness, but also in health, and in the affairs of the community. The successful practitioner must be able to see the patient as a human being as well as a case for diagnosis and treatment. This social interest in community affairs will help to strengthen our relation with our fellow people. As the physician is successful and becomes established in his practice, he is looked to for his opinion in many community problems and a responsibility for the whole community welfare develops. If the young medical graduate, even though he holds to the idea of specialization, be made to realize that rural practice is greatly to his advantage as a preparation for his future work, it would be not only a great benefit to him, but to the profession as a whole.

If the people are given a chance to benefit by contact with earnest, conscientious, ethical physicians who will talk with them honestly about the seriousness of a given disease, and the what and why of certain conditions, instead of trying to keep them in ignorance, then the time will come when they will become educated to realize the necessity for getting the best that scientific medicine can offer, rather than to take up with the cults that are prevalent. It is only by keeping public intelligence abreast of the forward ranks of medical knowledge that the uninformed, the skeptical and the quack will fall by weight of their own incompetence and ignorance. Laws regulating the practice of medicine have a two-fold purpose, primarily to protect the public against incompetent or dishonest practitioners, and secondarily to protect the reputable practitioners, who have prepared themselves by a long, laborious and expensive course of education and preparation and are honestly trying to prevent, relieve, and mitigate the physical ills of their fellow beings. There have always been hanging to the ragged edges of the medical profession a varying number of so-called cults and healers and what not, who soon get to the point which they believe is the highest phase of medical knowledge, and endeavor by all sorts of short cuts to get into the circle where they may be considered on an equality with the educated and competent doctor. They seek not to rise to the scientific achievements, but rather measure their success by the increased number of figures in their bank account.

For the purpose of seizing upon new medical ideas, threshing the wheat from the chaff, and making the good available for general use, there

is nothing equal to the discussions of a live country medical society, where all the doctors of the vicinity take active part and cooperate to increase their efficiency. The needs of the sick and the injured as well as the demand for efficient preventative medicine, require that all members of our profession shall apply the best that medical science has to offer, and the public is properly insisting that it have such service. Good hospital organization and good hospital facilities are a community necessity and should spring from public demand. These hospitals will succeed and enlarge as a result of whole-hearted, unstinted and unselfish support. Dr. Billings has been quoted as saying that there should be a small well equipped hospital in every county, and every movement in that direction should be encouraged by us.

Who, other than the members of our profession are responsible for the development and popularizing of the movements of infant hygiene, and who has pointed the way and proved the necessity for attention to school and factory hygiene? From what source did the agitation emanate that has directed attention to the need of eliminating the overcrowding and bad housing of industrial workers? Who were the founders and instigators of the societies for prevention of blindness, insanity, tuberculosis and venereal diseases? These, and many more successful movements and activities in the field of social betterment are the work of you and your fellow workers of the medical profession. It is fair to assume that through the development of research work and the progress of the medical world in general, the future need, and demands for better medical care and well equipped hospitals will be met. To be sure, there are not many such giants as Pasteur in the medical world, but each and every one plays his part in bringing about this progress of medicine, according to his talent and willingness to serve, and all must be given due recognition for their contribution toward that advancement in the medical science, which is efficient medicine.

ASSOCIATION OF AMERICAN MEDICAL COLLEGES

At the thirty-third annual meeting of the association, at Ann Arbor, Michigan, March 2-3, the following officers were elected: Dr. Irving S. Cutter, Omaha, president; Dr. Ray Lyman Wilbur, San Francisco, vice-president; Dr. Frederick C. Zappfe, Chicago, secretary; Dr. Nathaniel C. Allison, St. Louis, executive council; Dr. Walter I. Niles, New York, executive council.

The next annual meeting will be held at Omaha.

STRIDOR AND DYSPNŒA IN CHILDHOOD*

JESSE B. NAFTZGER, M.D., Sioux City

The causes of stridor and dyspnœa in childhood will be classified in this paper in relation to the larynx and trachea as I. Nervous disorders: II. Causes extrinsic to these structures: III. Intrinsic.

I. *Nervous Disorders*—The most prominent in frequency is probably laryngismus stridulus or spasmodic croup, attacks of which come on suddenly and have history of recurrence. It is usually found in poorly nourished children. The lack of fever and prostration and history of recurrence aid in diagnosis.

Tetany according to Holt and others is much more common in children than formerly supposed. It occurs most frequently during the latter half of the first and second years and may result in death. Tetany is a disease characterized by extreme irritability of the nervous system to mechanical and electrical stimulation and may be accompanied by laryngeal spasm.

Bilateral laryngeal paralysis may be the cause of severe stenosis of the larynx. Functional paralysis may give symptoms of stenosis.

II. *Extrinsic Causes for Dyspnœa and Stridor*—Under extrinsic causes of dyspnœa and stridor would be mentioned (a) enlarged glands; (b) tumors and aneurysm; (c) abscesses; (d) injuries, and (e) foreign bodies.

(a) Enlarged mediastinal or cervical glands may cause pressure on the trachea.

(b) The most frequent extrinsic tumor in childhood is the enlargement of a persistent thymus. This may cause stridor, dyspnœa and in some cases sudden death. Tracheotomy is sometimes indicated for the severe dyspnœa. Radium has a marked influence on reducing the enlarged glands. Jackson says that thymus death attributed to status lymphaticus and hyperthy-mization of the blood is really nothing more or less than arrested respiration, which is usually fatal because respiration when arrested by obstruction cannot be started. Hypertrophy or accessory lobes of the thyroid may cause similar symptoms.

(c) Retropharyngeal abscess will often cause severe dyspnœa. The writer has seen two cases where a diagnosis of laryngeal diphtheria had been made because of dyspnœa due to pressure from the abscess.

*Presented before the Seventy-First Annual Session, Iowa State Medical Society, Section Ophthalmology, Otology and Rhinology, Des Moines, Iowa, May 10, 11, 12, 1922.

(d) Injuries may cause swelling of the larynx and trachea. We should not forget the contraction of the trachea due to the long use of tracheotomy tubes. Any of you who have had the experience of trying to remove a tube which has been in place several months in a child under one year of age will appreciate this. In many cases because of the softening and infolding of the edges of the cartilage and the consequent contraction of the lumen of the trachea the tube must be left in place for a year or more until the larynx enlarges by natural growth.

(e) Foreign bodies outside the larynx or trachea as the cause of pressure will usually be found in the hypopharynx or esophagus. The following cases from our practice will illustrate.

Case 1. A child under two years brought to the hospital for probable intubation or tracheotomy for supposed diphtheria. Several members of the family were just recovering from diphtheria. Child had been well until that afternoon when the mother found him choking and coughing; he had had stridor and dyspnoea since. Because of the history of sudden onset and lack of severe systemic symptoms a radiogram was taken at the hospital which showed a large carpenter's screw firmly caught in the esophagus. Pressure on the trachea caused the symptoms.

Case 2. Girl about five years of age. History seven months previous, of a sudden vomiting and choking attack. Had been unable to swallow solid food since. Examination showed child much emaciated. Had stridor. Chest examination negative. Radiogram showed the foreign body in the esophagus. The child had been under treatment for asthma and had had tonsils and adenoids removed several months before in an attempt to relieve the symptoms. The foreign body proved to be a piece of brass about three-quarters of an inch wide and an inch and a half long. This was removed with considerable difficulty because of the firm impaction in the swollen esophagus. This was later followed by stricture of the esophagus.

Case 3. Child two years of age. Several months previous had had a sudden attack of choking and vomiting. In a few moments the child seemed to be all right except for some difficulty in breathing and the parents noticed that he could not swallow solid food. Examination: Patient had stridor, both inspiratory and expiratory which as Sir Wm. Thompson points out indicates pressure on the trachea or obstruction in the trachea. The radiogram showed a large button in the esophagus, after the removal of which the respiratory symptoms immediately cleared up. In cases of long standing impaction of a foreign body in the esophagus where there is considerable necrosis an esophageal stricture is liable to develop later. We have these cases return at intervals

for dilatation. These cases are reported because of the marked respiratory symptoms.

III. *Under Intrinsic Causes of Stridor and Dyspnoea*—(a) congenital stridor; (b) new growths; (c) stenosis from scars, burns, etc.; (d) foreign bodies, (e) acute inflammations and infections with or without membrane formation.

(a) Under congenital stridor, Iglaue in his paper on Epiglottidectomy for the relief of congenital stridor read before the Academy of Ophthalmology last October very well describes congenital stridor of children and outlines the treatment, epiglottidectomy, which he used with success in one case. The stridor is noticed soon after birth, is inspiratory in character, and may increase in severity for some time. It usually disappears during the second year of life but may terminate in death. These cases are rare and are due to a narrowing or infolding of the epiglottis and narrowing of the vestibule larynx. Congenital stridor must be differentiated from stridor caused by congenital tumors. Rarely tracheotomy is indicated for the relief of the dyspnoea. (b) New growths: Papillomata is the most frequent growth met with in the larynx in children and may be congenital. It occurs as a warty or cauliflower like mass on the cords or arytenoidal folds but may elect other places for growth and has been noted in the trachea. Jackson reports one case of congenital and one of probable congenital papilloma in children. Papillomata in children have a marked tendency to recur and various treatments are advocated. Endolaryngeal extirpation with local treatment by alcohol or caustics is the most popular method of handling these cases. Radium and x-ray have been used successfully. Tracheotomy in recurring cases undoubtedly aids by giving the larynx complete rest. Papilloma and fibroma may be primary in the trachea. Jackson reports one thyroid tumor removed from the anterior wall of the trachea. Fibromata are histologically the same formation as papillomata. Cysts may be congenital or retention and usually form on the surface of the epiglottis or cords. Other tumors than these mentioned are not met with frequently. (c) Stenosis may follow contraction of scars following burns from caustics, operations, ulceration and infectious diseases or tracheotomy. Inhalations of caustics, acids, etc., are often followed by stenosis. Injury to the larynx and trachea following removal of foreign bodies or the introduction of a bronchoscopic tube may be followed by stenosis. Ulceration occurring in infectious diseases such as influenza, diphtheria, scarlet fever, small-pox, etc., may be followed by stenosis. The contrac-

tion of a tracheotomy wound where a tube has been left "in situ" for some time in young infants is frequently followed by stenosis. Subglottic œdema may be caused by the careless introduction of a tube or the use of too large a tube for the removal of a foreign body. (d) Acute inflammation may cause dyspnoea from the severe congestion of the mucosa and may be encountered in influenza, scarlet fever, small-pox and mixed infections. Acute subglottic laryngitis occurs chiefly in infancy causing dyspnoea and cyanosis. The prognosis is usually good but may result in death.

Diphtheria with membrane formation in the larynx is the most frequent cause of disturbed breathing in acute infectious diseases in childhood, but we have also seen a number of cases of streptococcus and mixed infections with and without membrane which gave the same symptoms. The laryngologist may be called in consultation in these cases and a careful differential diagnosis is important. In event the case is "in extremis" when first seen it may be necessary to do an emergency intubation or tracheotomy at once and confirm the diagnosis by examination and culture afterward. When the case is in the home without trained attendance the patient is usually safer with a tracheotomy than intubation tube. Of these emergency cases during the past year four proved to be streptococcus or mixed infections with symptoms similar to laryngeal diphtheria.

Case 1. R. E.—History of temperature for four days with increasing difficulty in breathing. When seen had severe dyspnoea and cyanosis. An intubation tube was introduced but could not be kept in place. A tracheotomy was performed which improved the breathing. There was redness and intense swelling of the mucosa of the larynx and trachea. A culture and smear taken through the tracheotomy wound showed pure streptococcus infection. The patient died within twenty-four hours.

Case 2. C. M.—Child about three. Had laryngeal stridor for about three days; had been given 15,000 units of antitoxin. When seen had severe dyspnoea and cyanosis and the child was very weak. A hurried tracheotomy gave considerable relief; much thick brownish secretion was expelled. Later a bronchoscopic tube was introduced through the tracheal wound which aided in relieving the secretions. A grayish white membrane could be seen above. A culture and smear were taken through the tracheotomy wound. Death occurred in about twenty-four hours and an autopsy was obtained. Autopsy: Tonsils and pharynx apparently normal; larynx split in midline. Below the true cords the larynx was lined with a thick gray membrane, firmly attached to the mucosa. Trachea and bronchi: The mucosa of the

trachea and bronchi was greatly thickened and was a dark red color; much brown mucoid material was found in the trachea and almost blocked the lumen of the bronchi. Portions of the membrane from the larynx and material from the trachea were taken for culture. Report of the bacteriologist showed streptococcus.

Case 3. Child two years of age. Practically "in extremis" when seen. An emergency tracheotomy did not prolong life. Culture from larynx and through tracheotomy wound gave streptococcus and some diplococcus, no diphtheria.

Case 4. L. P.—Six years of age. History of sore throat infection in the family; child had been ill for several days; had attack of croup two or three days previous and had been hoarse since. During the last twelve hours the breathing had been getting worse and when brought to the hospital the patient was fighting for air; had stridor and severe dyspnoea and was quite cyanotic. A tracheotomy was followed by considerable relief as a large amount of thick brownish white mucous was expelled. A culture taken from up in the larynx and down in the trachea; the mucosa of the trachea was greatly thickened and red; no membrane was seen; the lumen of the trachea was practically closed by the swollen mucosa. The mucous continued to be expelled through the tube in large amounts for over forty-eight hours. The symptoms gradually subsided and the patient eventually recovered. The tube was removed in about seven days. The culture taken showed streptococcus with some diphthericci. The streptococci predominated.

The severity of these cases over diphtheria is illustrated by the fact that only one of the four cases recovered. During the same period four emergency tracheotomies were performed in laryngeal diphtheria. Three of these recovered. All streptococcus and mixed infection cases showed symptoms similar to laryngeal diphtheria. Three had antitoxin without results. The question which occurred to us is, "Are not these cases often confused with diphtheria?" In making a diagnosis in cases not of the emergency nature we have found it convenient to use a Jackson laryngoscope. This can be easily taken to the home and used with a hand battery and with it a good view of the larynx may be obtained and a culture taken from the larynx under direct inspection.

Discussion

Dr. H. E. Thompson, Dubuque (opening)—All I can say is that Dr. Naftzger has taken the wind out of my sails about the laryngoscopic examination of these cases. The general practitioner as a rule sees the laryngeal obstruction and he does not know what to do. He looks at the pharynx and tonsils and there is no membrane. He thinks that probably it isn't necessary to do anything but he may call a laryn-

gologist, but the laryngologist sees nothing or he may not see anything in the larynx. He may say nothing or do nothing but he probably should say to give antitoxin intravenously, but I think the practitioner should keep the laryngologist on the case and use the laryngoscope and if they look down and see any membrane there, take a culture immediately, give antitoxin intravenously until they get a report on the culture, then there are two things for the laryngologist to do—keep ready to do an intubation. At the first signs of the child having any real dyspnoea, they can do an intubation. But there are drawbacks to intubation. After you intubate the child, you have increased difficulty in starting respiration. You have always got the chance that the child is going to evict an intubation tube and later, the child may cough out the tube and if he does this, you may not be there and the child will die before the tube is replaced and the chance of bronchial pneumonia for an intubated child is very high, exceedingly high. Personally on this matter, I want to mention that I have had but one experience, and one case, and what I was going to say was what I have talked over with Dr. Thompson of Hoover-Parker Hospital. In 1920 there were seventy-five cases entered Hoover-Parker Hospital, cases that required some mechanical relief for obstruction in diphtheria. Those seventy-five cases were intubated and the deaths averaged 30 to 35 per cent. In 1921, due to the fact, evidently, that the New York Board of Health waged a campaign in order to get the earlier use of antitoxin, there were only fifty-three cases entered with symptoms that needed mechanical interference. The previous year those fifty-three cases would have meant fifty-three intubations. They do intubations day and night because they have two men there who are never out of their clothes, who are always on duty when there is a required intubation and they very seldom lose cases because the tube is kept in position. In 1921, out of fifty-three cases that would require intubation, only sixteen cases were intubated. These other thirty-seven cases were treated the usual way, by using the Jackson laryngoscope and in going down to get a culture, he found that very frequently if he would use an applicator with a piece of gauze on it that was held down tightly, that he would dislodge the membrane there and he found that in these diphtheria cases that it very seldom was adherent membrane, but was slough, that was loose, and in going down to get the culture, he would dislodge that and the child would cough and he would not have to do his intubation for eight or ten hours, when it might come on again and he would have to do the intubation. In 1921, he began to wonder why he could not do this all together, so out of the fifty-three cases, thirty-seven were treated by going down with the Jackson laryngoscope and with a straight probe, dislodging this membrane just a little bit and the child would cough and free this. He sometimes has to do this once, more generally twice, sometimes three times and in two cases in 1921, he had to do it

four times, but you see he obviated the danger of putting in an intubation tube in thirty-seven out of those fifty-three cases. Now the mortality before from these cases the country over, I imagine was 30 to 35 per cent. Now out of the thirty-seven cases that were treated by trying to dislodge this membrane without an intubation tube, one died of bronchial pneumonia. Out of the other sixteen cases, ten died of bronchial pneumonia. Of course we have to admit that those ten cases were the severe cases. He tried this treatment on these and it would not work and he had to put in an intubation tube. They were the severe cases so they should be eliminated in so far as statistics go. So out of fifty-three cases, he had one death from bronchial pneumonia in those that he treated this way, and ten deaths from his intubation cases. That makes eleven out of fifty-three, which is practically one to five, or 20 per cent, so Dr. Thompson has reduced the death rate in these cases of laryngeal diphtheria from 30 or 35 per cent to 20 per cent. He also has gotten away from having so many intubation cases. * * * In the case I had, it worked all right. I have only had experience in one case, but I used it and the result was good and it was a case that would have been intubated, but in this way, with early intervention of 15,000 units of antitoxin and removal of the slough and matter, I did not have to do an intubation:

Dr. Lee Wallace Dean, Iowa City—This paper of Dr. Naftzger's is so excellent that it should not go by without being discussed. I would like to say a few words about dyspnoea in status lymphaticus. Dyspnoea in status lymphaticus is not always due to laryngeal stridor or to pressure on the trachea. In a case of status lymphaticus with dyspnoea I have done a tracheotomy without relief, I have passed the bronchoscope to the bifurcation of the trachea without relief. On a child who died following the removal of tonsils and adenoids from status lymphaticus, the tracheotomy performed before death was not beneficial; the autopsy showed that there was no pressure upon the trachea. The dyspnoea of status lymphaticus is not necessarily dependent upon the condition of the thymus. It has never been shown that the thymus has any toxic influence on the respiratory center. The disturbance of dyspnoea thymic asthma must be frequently due to something outside of the thymus.

Dr. J. E. Reeder, Sioux City—I would like to report an interesting case which came into my hands two weeks ago. A young child, nineteen months of age, with a history of having swallowed a penny two weeks previous to the time they first consulted me. History: First week the child was very dyspnoic. Second week the dyspnea disappeared and would only recur during some excitement such as laughing or crying. All general physical findings were negative and the roentgenologist's report was negative for foreign body. Upon direct laryngoscopy I found a papilloma which was very much pedunculated along the anterior surface of the larynx,

just below the cords there was marked respiratory embarrassment. This is rather a unique case due to the fact that the child's difficulty was attributed to the foreign body, which apparently had nothing to do with her respiratory difficulty.

Dr. C. W. Harned, Des Moines—I would like to say a word in regard to the relief of dyspnoea from diphtheria or from most any other cause where a tracheotomy is contemplated. It is unfortunate that the specialist is usually called in very late in these cases. Many physicians do not seem to realize the danger, and the case may be critical when they are called, sometimes they are not prepared to do anything except perhaps a tracheotomy and that is the point I want to mention, that if tracheotomy is contemplated, it should be done very low down because the contractions of the scar resulting from the tracheotomy may cause stricture and subsequent dyspnoea. It has been my misfortune to have two of these cases that have had a tracheotomy performed, and the cases are now in a very critical condition because of the laryngeal stricture causing a permanent contraction. I cannot recall the article or the man that wrote it, but he cited a great number of cases that came into a large hospital and the number of strictures occurring after tracheotomies and sometimes after laryngotomies were appalling, and the treatment is very different. It is a question in my mind at this time whether a laryngotomy is ever justifiable or even a high tracheotomy. A low down tracheotomy, while a little more difficult, certainly gives the child an opportunity for a prolongation of life and under moderately skilled hands, is not any more difficult than laryngotomy or high tracheotomy and certainly is more easily handled than intubation, in the homes where skilled attendance is not available.

Dr. W. W. Pearson, Des Moines—This subject will come up in a measure in the next paper but I cannot refrain from saying a few words about the interference of the breathing in these youngsters. A good many years since, when starting to practice, I was not used to these cases of diphtheria and I was always impressed, when I first saw the patient, with the possibility of dyspnoea in the two classes of these cases,—one where the patient was seriously ill and the surgical interference or relief from the dyspnoea did not give us the result,—the other a case of heavy membrane and the patient, aside from the fact that there was mechanical interference of the breathing, was in good condition. The moment I saw a case of that kind, I thought I was pretty well in the clear. Just for example, I recall one case where I was called in, it is perhaps fifteen years since, maybe longer than that, and the patient was well along in the throes of diphtheria. It was late Sunday night and I was called in consultation with a number of prac-

titioners who were not skilled in using the antitoxin serum and it was three against me. I immediately recommended the use of the serum but I was outnumbered and did not have the deciding vote, so I sat quietly for an hour or two until the child became unconscious, then I turned to the father and said, "Now we are up against it, either to relieve this mechanical interference at once or we are going to have a dead child." "Well," he says, "do anything you want." So I did not consult anyone else and it was not necessary to use anesthesia of any kind but I immediately did a tracheotomy and in the matter of a few minutes, the child regained consciousness and on my own responsibility, I gave the child about 10,000 units of antitoxin and left my tracheotomy tube in. I think it was the next afternoon I was called that the tube was filled up and the child was again unconscious. When I reached the child, I immediately took out my tube and I had been informed through my familiarity with literature, not to go down into the trachea with a swab because of the danger of heart-bloc, but it was the only thing for me to do, so I took an applicator and went through my wound down to the bifurcation—I had attached a piece of cotton to the applicator, and the child coughed unconsciously and there was removed from my tracheotomy wound a complete cast from the large bronchi and smaller bronchi. This specimen, which was a very interesting one, I was able to preserve for sometime but finally it deteriorated and was destroyed. Now this child, after the removal, again regained consciousness, breathed regularly and felt well, in other words, there was no other difficulty than mechanical obstruction. I fought that thing out for three or four days and from Sunday night to Thursday I kept a carriage at my door so I could run there at a moment's notice and repeat the treatment but the child made an ultimate recovery. This must be fifteen years since because not long ago the father of this patient removed to Vermont and I received a card of the young lady's graduation from high school. But I have always been impressed with that one thing. Have we a child with merely a mechanical obstruction or have we a very sick child with systemic complication? It is an entirely different matter when we treat these cases. In the following paper, some of these subjects will be brought up.

Dr. J. B. Naftzger (closing)—Dr. Thompson's remarks regarding the intubation tube statistics are very good indeed. The cases, however, that are outside of the hospital and trained attendants are, we believe, very much safer with tracheotomy tubes than intubation tubes. Dr. Dean's bronchoscopic observation during the talk will give important information as to the cause and manifestations of thymic asthma. Jackson states in one of his books that he believes the cause of thymus death is arrested respiration due to obstruction.

SPREADING PERITONITIS AND ITS
TREATMENT*

A. G. HEJINIAN, M.D., F.A.C.S., Anamosa

It is true that under present advanced aseptic surgery and surgical technic, practically we have no more spreading peritonitis after our abdominal operations on clean cases, but still we see such cases in our hospitals caused in various other ways that baffle all our present scientific knowledge.

On this account and being impressed by the importance of the subject, when I received the kind invitation from our program committee and from the chairman of this section, to write a paper for this meeting, I decided to present this subject to you, not to write a scientific paper, but to give to you some facts and points relative to it for your consideration and general discussion.

We know that the peritoneum is the largest serous sack of the human body. Its dimensions are almost equal to that of the skin. On account of its immensity, it was supposed if any pyogenic microbes get access to it and progressive inflammation sets in, it will be impossible to stop or to retard rapid spreading peritonitis and save the life of the patient, but it is not so. The delicate, fine peritoneal tissue would have been, it is true, easily vulnerable to pathogenic germs if it was not provided with a minute net work of lymphatic channels, itself almost being a part of the lymphatic system. As DeCosta¹ says, "Peritoneum is in reality a great lymphatic sack and peritonitis a lymphangitis." Being rich in lymph and lymph corpuscles whenever any germs invade any part of this fine membrane it causes rapid leukocytosis, aggregating numerous phagocytes which envelop and absorb with great rapidity the invading micrococci and destroy them.

R. H. Hotchkiss² says, "Dubar and Remy were able to recover particles of carmin from the thoracic duct only seven minutes after interperitoneal injection."

Piersol³ says, "The great absorptive power of the peritoneum * * * aids materially in lessening the danger of infection. It has been demonstrated experimentally that from 3 to 8 per cent of body weight in fluid can be taken up by the peritoneum from within its cavity in one hour, which is equivalent to a total body weight in twenty-four hours." Thus it has a wonderful power for rapid absorption and destruction of germs.

The omentum also is a great factor in the pre-

vention of spreading peritonitis. Rightly it has been named "abdominal policeman" and "a friend in time." Not only it rapidly adheres to the surrounding inflamed parts to limit and localize the peritoneal infection, but it also contains "many phagocytic cells"⁴ that fight and destroy the invading pathogenic germs.

For these reasons we are able to show such an amazing success in our abdominal work, if nature had not helped us, our aseptic and antiseptic surgery would not have amounted to anything. I am sure in every laparotomy that we perform in some manner from the air or otherwise, some pathogenic germs will have entrance into that cavity, but nature is our assistant and is able to take care of them.

So often we hear of a stitch abscess, finding fault especially with cat gut used, but I can say positively that 90 per cent of the stitch abscesses are caused not by the cat gut but by the surgeon's or the assistant's carelessness, by which they have introduced sufficient amount of microorganisms into the field of operation to infect it. The peritoneal tissue has been able to dispose of these germs with immunity but the adipose tissue of the abdominal wall has not been able to resist the infection and destroy the germs. Thus we have as a consequence, the stitch abscess. The peritoneal cavity has been as it were a "dumping ground." Sterile foreign bodies have been left in, forceps, sponges, etc., with immunity for a long time and sometimes years. What other tissue of the body has this resistance? Obviously, nature has marvelously enforced and fortified this fine, delicate membrane in its normal state against invading enemy, pathogenic germs.

Senn⁵ says, "Rinnea is of the opinion that the peritoneum when in normal condition is almost immune to infection with pus microbes. He injected from thirty to thirty-five cubic centimeters of pure cultures of pus microbes into the peritoneal cavity of healthy animals and not succeeding in this manner in producing peritonitis." However, it is greatly weakened by any form of traumatic injury, by prolonged exposure, by long manipulation which will cause exfoliation and shading of endothelial cells. As to the extent of traumatic injury received, it becomes vulnerable to the infective material. Piersol⁶ says, "The resistance of the peritoneum to infection is usually in direct proportion to the normality of its mesothelial coat which is lessened by all forms of traumatism, including handling, sponging, etc."

Colon bacillus is the most common that invades the peritoneal cavity. Next come in order, streptococcus, gonococcus, pneumococcus, staphylo-

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coccus and other germs, but more or less the mixed infection is the cause of general peritonitis. Streptococcus infection has proved to be more fatal than any other germ. Some of the patients who have spreading peritonitis caused by streptococci will die in spite of all care and all kinds of treatment if they are not operated on early, in less than at least eight hours after the onset of the disease. After that period, as a rule, infection is disseminated to the distant parts of the body. We might find in some of these cases general pyemia. They have severe chills every day and sometimes several times a day and temperature but not regular in type. They might manifest symptoms of cholangitis, pylephlebitis, simple pyelitis, pyonephrosis or septic endo- and peri-carditis. They might linger several weeks, but as stated above, they will die in spite of modern best treatment.

John C. Munro⁷ says, "The diffuse spreading streptococcic forms are always fatal." William Dorrach⁸ says, "Pylephlebitis is usually fatal * * * nothing can be done beyond easing the patient." In those cases at post-mortem examinations have been found the most common seat of the secondary infection in the liver which becomes dotted all through by minute miliary abscesses. Often the kidneys have been found in the same condition, occasionally some other organs.

The various kinds of germs get access into the peritoneal cavity mostly from the organs it contains and from the surrounding parts. As a rule by perforation, occasionally by extension. Sometimes a traumatic injury might be the cause of the entrance of the pathogenic germs. About 75 per cent come from acute, gangrenous, perforated appendices, next from female genital organs, next from perforation of duodenal, gastric, typhoid and other intestinal ulcers, from hepatic and renal abscesses and from perforation of gall and urinary bladders, or through the blood current. Infection may come from pneumonia, from septic tonsils and from any other focal infection. However, hematogenic infections are not so often.

As Ziegler⁹ says, "In rare instances the affection is traceable to hematogenous infection." Always there is a source of infection which might be in a distant or adjacent organ. Never do we have idiopathic peritonitis of old authors.

The cardinal symptoms of spreading peritonitis are well known to all of us. Always we find the patient is suffering more or less from pain, has nausea in various degrees. Rapid, wiry, hard pulse is characteristic for these cases and the temperature might be high or it might be subnormal.

It has been very often misleading. At the last they might have a dry coated tongue, sordes on the teeth and lips, abdomen gradually becomes distended, tympanitic and tender, anxious and pinched expressions, the characteristic facies.

In making the diagnosis of peritonitis the history of the patient is very important indeed. We must try to find if there is any primary cause in a given case to make the approximate or exact diagnosis and where that primary cause is located. As stated above, appendicitis is the principal cause of general peritonitis. If we have that history it is sufficient to know it is a case of peritonitis. Also the history of duodenal or gastric ulcers, typhoid fever and pneumonia, tonsillitis, etc., will assist us in making our diagnosis.

I asked the Sister in charge of the records of the Mercy Hospital to find out how many cases I had operated on spreading peritonitis from the first of January, 1912, to the first of January, 1922, namely, within ten years. She reported to me 213 cases, as follows:

	Cases	Deaths
From Perforation of—		
Gangrenous Appendicitis.....	168	11
Pyosalpinx	27	2
Gastric and Duodenal Ulcers.....	12	0
Gall Bladder.....	3	0
Urinary Bladder.....	2	1
Intestine from gun shot wound.....	1	0
	213	14

The above were cases of peritonitis in all stages. We operated on all of them that had been brought to the hospital, it did not matter in what condition they were in, nor how far they were advanced. Two of the deaths were streptococcus infectious cases that lived about three weeks after operation and died from pyonephrosis and pylephlebitis. One died two weeks after the operation from erysipelas. One of the urinary bladder cases died from pneumonia about a week after the operation. Three died one to three hours after operation, they were almost in a moribund condition when brought to the hospital. We wished to give all a chance of life. We were positive they would die without the operation, if so, why not give them the benefit of the doubt. That leaves seven deaths from the two hundred thirteen cases, about 3.04 per cent mortality. Early diagnosis and proper early treatment would have saved almost all of the above cases.

William J. Mayo¹⁰ says, "If the cause of acute peritonitis is removed within six or eight hours * * * resulting peritonitis will be very slight and localized." John C. Munro¹¹ says, "If it

were possible to treat surgically every case of peritonitis within twelve hours at most after its onset, the mortality * * * would fall to a small fraction of one per cent." John T. Bottomley¹² says, "The one great essential of successful treatment is early operation."

We cannot express ourselves in any stronger way the importance of early diagnosis and early surgical treatment of peritonitis. There was a time that our pioneer modern abdominal surgeons, as Murphy, Mayos, Ochsner, Deaver and others made the plea to consider all cases of appendicitis surgical and treat them as such as early as possible. At that time some of our internists were opposing them, and that conscientiously, but now all of them are converted. We seldom find a case of appendicitis neglected by a regular physician. As soon as he makes the diagnosis he refers it to a surgeon and lessens the danger of general peritonitis. But still we find various kinds of healers, magnetic or what-not, who oppose scientific knowledge of modern surgery and its practice, and woefully neglect those cases. It seems to me that it is a sad reflection upon the intelligence of our country to let them loose to trifle with human life without knowing what they are doing.

As it was emphasized some time ago, that all cases of appendicitis are surgical cases, and should be operated on at once or as soon as the diagnosis is made, now we do emphasize the same in regard to the spreading peritonitis with but slight exceptions. As F. S. Matthews¹³ says, "The diffuse spreading or general peritonitis should be operated on at once except when patient is in extremis." We ought to operate on them at once for three reasons. First, to stop the focus, of the infection. Second, to provide free exit for the pathogenic germs and their products. Third, to relieve the intra-abdominal tension for rapid absorption.

I think the principal exception to the rule of immediate operation is hematogenous peritonitis, when the source of the infection is not directly connected with the peritoneal cavity and comes through the blood stream. For instance, pneumococcus infection secondary to pneumonia. We ought to treat such cases by Ochsner treatment. Also we ought not operate on them in their intermediate stage. We must wait and see if localization takes place or sufficient effusion accumulates in the peritoneal cavity to cause enough tension to induce rapid toxemia, then we may operate on them at once.

But it is not so with the perforated, gangrenous appendicitis or perforated duodenal and gastric ulcers or any other perforation adjacent to

the peritoneal cavity which is a continuous source of infection and is causing rapidly spreading peritonitis. In those cases the abdomen should be opened at once and stop the source of the infection, and by proper drainage to provide free exit for the pathogenic germs and toxic product and to relieve the intra-abdominal tension.

In regard to the manner of treatment of spreading peritonitis, I am not going to say much. My plan has been "to get in quick and get out quick" in all my abdominal operations handling the viscera the least possible. Always it is my plan not to expose any parts of the small intestines and not to touch them if compatible with good work. Whenever necessary to use more than one or two small sponges, we use only a large gauze sponge in the abdomen, large enough to protect the intestines and hold them back. We have no racks to hang them on, and count them during the operation as we have seen in some of the hospitals, and unnecessarily we cannot spare a nurse to count them and delay the operation. Sometimes by mistake of the nurse, or some one else, thinking that one is missing, it has been necessary to open the abdomen a second time and not to find it there but later in the waste pan.

I drain the abdomen thoroughly, and if necessary, through three places. One through the lower end of my incision, which is generally the right rectus, one at the right groin or right flank near the iliac crest, and occasionally one on the left groin. As a rule I have for drainage a short rubber tubing split long enough to go through the thickness of the abdomen to keep it patent, covered with one end of a piece of gauze, and the other end of the gauze within the tube long enough to reach to the dependent portion of the abdomen where I wish to drain. I use about three to four inches wide, 5 per cent iodoform gauze. I do not put it down straight but loosely pucker it down. I never pull it out the next day but beginning after forty-eight hours I slowly pull it out partly. At the end of the fourth day it comes out easily. For several years I have seldom used long rubber or any other kind of tubing to reach low down in the pelvis or come in contact with the viscera, because they might cause pressure necrosis, delay the healing and occasionally will cause perforation of the bowels resulting in long running fistula.

There was a time that I used to wash out the parts with warm saline solution during and after operations as after treatment, but the last several years I have not used any before and seldom after, because it is impossible to remove all of the infective materials and there is some danger of

disseminating them and danger of opening the sealed minute capillary vessels to absorb the septic material, also danger of destroying the protective phagocytes and lymphocytes.

As Murphy¹⁴ says, "Washing removes pus and with it myriads of leukocytes sent there for the sole purpose of protection." I have always had more rapid healing of the parts without washing and without disturbing the parts at the operation. I gently mop out the parts with wet saline gauze sponges without disturbing them as much as it is possible. After the operations the patients are always put in such a position that will drain the best, which plan I have carried out for the last eighteen years or more, Fowler's position or on their side, any position in which gravitation will help to drain the best, meanwhile aiming as much as possible to keep the infection away from the diaphragm, because the lymphatic channels and stomata being larger in that region, they could not be rapidly sealed up against the infection. But it is not so in the lower parts of the abdominal cavity, especially in the pelvis where lymphatic vessels are smaller and are more easily sealed up. We do institute proctoclysis at once as soon as the patient is returned to the bed and keep it up as long as it is required. We add to the normal saline occasionally nutrient enema wherever it is indicated. We never try the first twenty-four hours after the operation to make the patient's bowels move. If they move themselves from the saline injections, all right. If not, we let them alone unless there are some indications for it as after pains, too much gaseous distention, etc. If so, we use soap suds and turpentine enema which as a rule gives relief. If not, after four to six hours it is repeated. If needed, we use glycerin, magnesium sulphate enemas. Generally plain saline or s.s.t. has given the desired result.

The first week or ten days we make the patient's bowels move every second day only with the enemas. When the patient is much better and the bowels have moved several times by them, then we give them the first time one ounce of castor oil and after that some other mild laxative as indicated.

I find that still some surgeons are using saline or castor oil cathartics the next day after the operation, or others advocating on the operating table before the patient is taken to his room to wash out the stomach and introduce two ounces of castor oil or one ounce of magnesium sulphate in solution. I think that is as much illogical as giving the next day by mouth. It will cause unquestionably increased peristaltic action of the bowels, disseminate the infection or cause vomit-

ing and even ileus. Therefore, the Ochsner treatment is as important in some cases after the operation as before.

When a patient keeps vomiting we do not give them anything by mouth, even water and resort to rectal alimentation with the normal saline, at the same time gastric lavage could be used. When vomiting stops then we give the patient liquids as diet until the bowels move. After that, if everything is normal, we gradually increase it to soft diet. We do not give them general diet until after their bowels have moved with the laxative, that is, a week or so after the operation, as stated above.

In conclusion:

1. Early diagnosis.
2. Operation as soon as diagnosis is made in all cases but hematogenous infected ones.
3. The reduction of the time of the operation to a minimum.
4. The least possible manipulation of the abdominal viscera.
5. Removal of the primary focus of the infection.
6. No irrigation of the parts.
7. Good but not harsh drainage.
8. Fowler's position or any other position that will assist to drain the best.
9. Abundant saline either by proctoclysis or hypodermoclysis the first thirty-six to forty-eight hours, as necessary.
10. No form of cathartics the first eight to ten days but enemas.
11. Nothing by mouth the first twenty-four hours or until vomiting ceases.

I am sure by the above measures and in co-operation with nature, we will bring our mortality of spreading peritonitis almost to nil.

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Discussion

Dr. M. J. Kenefick, Algona—Dr. Hejinian has presented a very practical paper, for while we have in the last few years made great progress along the

line of prevention in our surgical work, this is a subject that we shall always have with us in spite of anything that we may do. The medical profession will not be to blame for these frequent cases of spreading diffuse septic peritonitis. I shall take no time in referring to the etiology and pathology, which the essayist has adequately presented. The treatment of these cases has been very much improved during the last fifteen to twenty years, or since the advent of the Fowler-Murphy method of handling these cases and with which all surgeons are familiar. I feel that I should add to that the Ochsner treatment, which I may say is the best modern treatment, and we might well have a combination of the Fowler-Ochsner-Murphy methods. I wish to allude to one cause of spreading peritonitis that we can blame the surgeon for in converting some of these cases of local peritonitis into general peritonitis. The Doctor mentioned perforative appendicitis as the most common cause of diffuse septic peritonitis, which I believe is true—it heads the list. This condition is treated everywhere today by the general practitioner, and we may say the occasional surgeon or local surgeon. We learned one thing a good many years ago, and the old bald-headed fellows here will remember that when we first began operating for appendicitis the dictum was laid down for us that there was a time when we were a little bit late for the early operation and a little too early for the late operation. Now that holds true to this day. We found that out by sad experience eighteen to twenty years ago. So when we come to one of these cases that we think we should operate on the third or fourth day, here is where we are called upon to exercise the most careful surgical judgment, and one does not get surgical judgment from reading textbooks; that comes from sad experience. Ochsner taught us years ago that we should keep out of these cases, that there was a time when, if we operated, we would spread the infection. Another place where we convert a localized into a general peritonitis is in a well defined peritoneal abscess. The country doctor had success in these cases long ago because when he found pus he was frightened and quit. He was long getting in, but wasn't long getting out. If the patient lived he could refer him to the city surgeon later. Another thing I would object to in the treatment of these cases of spreading peritonitis is transportation of the patient for a long distance. In my opinion, it is better to bring the surgeon to the patient than to transport the patient a long distance, for this only spreads the infection and makes the condition worse. We have all seen many bad cases of that kind. With reference to drainage, the essayist says he still is using the capillary drain, packing with iodoform gauze. That is what Dr. Morris of New York calls practicing taxidermy on the patient. As a rule I use a large rubber tube and put it to the bottom of the well. I do not believe in knocking out the bottom of the well, as some advocate, in tearing up adhesions. There is another thing in these cases that has been

very much neglected, and that is stomach lavage. I think every surgeon should carry with him the stomach tube, which is not used often enough. It should be used more and more and used religiously. With patience and perseverance it can be used in a small child. I would recommend the Fowler-Ochsner-Murphy treatment, and that surgeons should carry in one hand the stethoscope and in the other a stomach tube.

Dr. Donald Macrae, Council Bluffs—In analyzing his mortality list the essayist I am inclined to believe means local peritonitis; but the title of his paper is "General Septic Peritonitis." Most of the latter patients die. The Doctor is speaking of early cases of local peritonitis. These cases will get well by practically any modern method that we care to handle. It is a question whether or not we should put in drainage. Personally I am like Dr. Kenefick—I insert a rubber tube to the bottom of the well and have a nurse with syringe and catheter sucking this tube out every few hours. A number of years ago a man received the Senn medal by showing that it was impossible to drain the peritoneal cavity after a few hours. After a certain number of hours there is no such thing as draining the peritoneal cavity. Nature throws a barrier around the tube and shuts off the area. So it is a question whether we should drain at all or not. Personally, in perforating gastric ulcer or anything of that sort I always drain the pelvis, paying no attention to the local condition in so far as drainage is concerned. After all in an early case what is the use of drainage when you are not going to be able to drain the cavity by any tube you put in there. I am thoroughly impressed with the method employed by Winsell; and recently brought out by Dr. McKinnon of Lincoln, Nebraska, namely: Draining the upper part of the jejunum in these cases. I want to add my testimony to the report of those who believe in it and tell you that I have seen almost moribund patients get well by this method, who I am sure would have died by the older method. McKinnon holds, whether we believe it or not, that most of the patients dying from this condition, do not die primarily of peritonitis, but die from the same cause that exists in cases of acute obstruction—absorption from the intestinal tract. Nearly all these cases are ballooned up. It is the practice often to put the hand below the sternum, and if you find the upper abdomen soft and pliable you are satisfied; if ballooned up and hard you feel like throwing up the sponge. If we anticipate spreading peritonitis or peritonitis so severe that the condition will develop beyond the local state, we re-operate, pick up the proximal part of the ileum, put the tube in, catch it with a plain catgut suture to hold it in position, then one or two pursestring sutures. In a few days you can feed the patient through that tube. In many of these cases when a fatal termination seems inevitable, the patient gets well by treating the inside of the bowel instead of the outside. These patients die just the same as cases of obstructive conditions

of the intestine, where, after the obstruction is relieved, death occurs because of absorption. Therefore in cases of threatened spreading peritonitis I think it is very important that we should try this method out.

Dr. Hejinian—I agree with Dr. Macrae that all patients with general septic, streptococcic peritonitis will die; it does not matter what kind of treatment we give to them. They will die not only of peritonitis, but also of infection of other organs, as stated in my paper. When appendicitis cases come to us, it does not matter what stage they are in, if we know that the infection is not localized and is spreading, we should operate on them at once. Just as in perforated gastric or duodenal ulcer, so in perforated appendix, we should stop the source of the infection. I hope the discussion that has taken place here will help us to make early diagnosis of these cases and give them early and proper treatment; then I am sure our mortality of spreading peritonitis will be reduced almost to nothing.

CHEMISTRY AND MEDICINE*

P. E. SOMERS, M.D., Grinnell

There is quite an element of presumption in the selection of the subject of "Chemistry in its Relation to Medicine" for discussion by a doctor who did his chemistry over twenty years ago, and who has probably forgotten much of what he then learned about the subject.

However, we all know that recent years have pyramided the importance of this allied science in its relation to medical problems. As physicians, if we have attempted to keep pace with current medical advances, we have been impressed more and more profoundly by the part chemistry is playing in those advances. Chemistry has influenced medicine since the days of alchemy. Modern chemistry began to have much influence on medicine about the fifteenth century. In the earlier days, the chief objective of chemistry was the search for medicinals for the use of the physician. Later the two sciences drifted apart in their interests; medicine turning to other means for the cure of disease, and chemistry devoting itself to the study of commercial problems, such as metallurgy. In the light of what we are beginning to see of the relations of chemistry to medical problems, we now know that this period of non-cooperation between medicine and chemistry spells a large delay in medical progress, and means that consequent untold suffering and loss of life resulted and still continues to result.

Witness the five or six hundred years of delay between the discovery of ether by chemistry in the thirteenth century, and the discovery of its anesthetic properties by medicine in 1846, with its great relief of suffering and its marvelous aid to the surgeon in his field. In like manner the chemist in his discovery of amyl nitrite was twenty-three years ahead of the physician in his appreciation of its value in relieving the agony of angina pectoris.

These are but isolated illustrations of thousands of similar instances of the penalties suffered by humanity, because of the lack of scientific cooperation between chemistry and medicine. This lack of cooperation is even today causing regrettably slow progress in the solution of many problems which ought to have been solved long ago. There can be no doubt that the present generation is overlooking many valuable remedies, simply because few of the new compounds are being tested for their value in medicine. The realization of the penalties we are paying in this way is the chief animus in the beginning move for a more concerted and scientific collaboration between the two sciences.

This collaboration can be effective and practical only by the union of chemical and medical research and study in some institution where facilities and ideals are available and devoted to the one purpose of seeking the solution of problems of human welfare. Too long we have waited for such an institution, being content with the scattered, un-organized and inadequate work done in institutes and laboratories which are not unmixed in their purpose. Organized medicine has taken too little hand in research work in those problems whose solution must come before medicine is anything more than a lame science. Too many of the important advances in medicine have been furnished us by some other science.

A little consideration of this fact will convince us that our pride cannot rise too high because of our medical discoveries. For instance, in the matter of sepsis and asepsis, we have perhaps the greatest revelation in medical knowledge of all time, with its resulting understanding of the cause and control of wound infections and many infectious diseases. With this discovery we may group, because worked out by the same scientist, the beginning of serum therapy, the explanation of puerperal fever and the control of hydrophobia by attenuated virus. You all know that the honor for these advances belongs to Louis Pasteur, who was not a doctor but a chemist. To no man does medicine pay greater homage than to Pasteur.

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Most of us think of him, or would like to think of him as a doctor of medicine.

Just to jar our pride, let me mention the modern and now universally accepted treatment of syphilis by the arsenical preparations. Who of us would so painstakingly have worked on those drugs as did Paul Ehrlich? For seven years he labored intensively, trying out and rejecting for one reason or another, six hundred and five different preparations before securing the magic "606", the forerunner of the later and more perfect arsenical remedies for lues. This work was done by a chemist and we have to record that the results have been greater in the five or six years of use of these preparations than those secured by all the previous work done by medicine, education or sex hygiene for the eradication of this greatest scourge of humanity.

Again, cocaine, a naturally occurring vegetable drug, one of the earliest of that class of local anesthetics, and of such great value to the human race, has been of such potent toxic effect that we hardly dare use it. Chemists have analyzed it and found its molecule to be a very complex one, not all of which is essential to its anesthetic activity, the non-essential being the toxic part. By chemistry the molecular elements which are useful as an anesthetic have been isolated and we have eucaïn and procain, both better than cocaine because less toxic, and a blessing to thousands of sufferers.

Note, too, the many alkaloids isolated from the unreliable vegetable pharmaceuticals, and so much more dependable in action and dosage. Homatropine, in all its advantages in ophthalmology over atropine; codeine as a substitute for morphine; hexamethylenamine in its great advantages as a diuretic over caffeine and theobromine. The great promise of a chemical modification of quinine, called ethyl hydrocupreine, becoming at least a forerunner of a specific for one of our greatest unsolved problems—pneumonia.

We must also recognize that the active principles of serums and vaccines are entirely chemical in their essence. That the rotten bulky serums with all their anaphylactic poison possibilities, while of inestimable value, are soon to be replaced by clean crystalline chemical preparations, embodying the active elements and so purified that they may be administered without their present bulk and dangers.

All these things of which I speak are chemical and not medical victories. There is no need of elaborating further by illustrations, of which there are thousands, showing what chemistry has

done for medicine. We are coming more and more, in recent years, to a realization that medicine cannot walk alone. It must lean heavily on the science of chemistry. For the solution of practically all our problems, we must depend on chemistry.

The human body is a chemical factory in which the most complicated chemical and physical changes are constantly occurring. We laugh at the crank who believes that endocrine therapy will solve all our troubles. Yet more and more we are learning of the powerful influences nature has entrusted to the endocrine glands. Already some of the endocrine derivatives are tremendously valuable in our therapeutic armamentarium. Who of us would be willing to give up epinephrin, pituitrin, thyroxin, or the ovarian derivatives? Yet who will say that our present knowledge of their physiological action is anything but empiric?

We are just beginning to understand that the vitamins have a tremendous effect on our health and are closely associated with the causation of certain diseases, such as scurvy and pellagra. But what of their chemical composition, how wide their distribution, how they differ when derived from different sources, and why they are so essential to our healthful existence, are problems that still belong to the realm of mystery.

The recent advances in understanding of proteins also pressage the coming help we are to have from a greater insight into the protein chemistry of the processes of digestion and the growth and metabolism of tissue, both physiologic and pathologic.

The mere suggestion of the need of intensive research in those most common diseases—pneumonia, tuberculosis and cancer—is all that is needed to awaken a concurring response in the heart of every experienced physician. The baffling features of these, our most fatal diseases, are positively going to be solved some day. They should be having more intensive study today than they are getting.

The more we consider the connection of chemistry with life problems the less ready we are to say that any of the physiological processes of our bodies can take place without dependence on chemical reactions. Ovulation, fecundation, embryonic development, respiration, circulation, digestion, muscular activity, brain functioning, cell growth, cell pathology, cell decay, every elemental process of the living organism, except, perhaps, that mystic thing we call "Life" itself, is reasonably traced to chemical action, or to important

dependence on chemical action. Yet how much do we actually know about the chemistry of the human body? We cannot even describe in scientific language, the difference in the physics and chemistry between living and dead cells. The protoplasmic equilibrium which maintains and perpetuates life, as distinguished from protoplasmic conditions in death, is still a mystery.

Another monster subject, the study of which bio-chemistry has barely begun, is that of colloids. The complex processes that go on in the cell units of our bodies, the intricate and ceaseless sequence of building up and tearing down that is constantly taking place in cell metabolism, are but manifestations of the chemistry of colloids. The physiology of the glands is explainable only by colloidal chemistry. The glands, in their selective activity, function under normal or abnormal influences. If we can learn what these normal and abnormal influences are with their resulting chemical conditions, we are getting close to a solution of the control of health and disease in those organs. The human body is a wonderfully organized community of millions and billions of cells, the ultimate units of life, differentiated into various types to form special organs, all working in coordinated activity and all interdependent for their welfare on the perfect working and health of each. How great, then, is the importance of knowing intimately the chemical processes operating in these hidden laboratories of the body, where all the fundamental reactions of life occur. These problems may seem impossible of solution, but they are no more difficult, than many already solved. In only one way may that solution come, and that way lies in the collaboration of medicine and chemistry in research. The responsibility has only to be placed on science and the opportunity and equipment provided, and the result will be given. We must demand something more scientific than our present practice of giving quinine or strychnine or serums, just because we get certain effects without knowing how or why. Perhaps we, of today, will not reap the benefits of such research as I am visioning, but if the medicine of 1922 can start the attainment of such knowledge, and the medicine of a half century or a century hence may work with an exact understanding of which we can only dream, then our posterity will rise up and bless us.

So far, I have discussed this question from a purely academic viewpoint, in order to make plain the more practical and real purpose of this paper. It seems to me that the need of intensive research is more than apparent and the real purpose of this discussion should be to consider whether we now

have adequate facilities for carrying on this vital work.

There are in the United States, a number of institutions which are doing medical research work of a high order. Practically none of them, however, approach the problems from a chemical standpoint. Many of them are established to study certain diseases, or classes of diseases, and hence are restricted in their freedom to work on fundamental problems. Many are established in connection with universities or medical schools, and are distracted in their research work by the necessity of instruction of students.

Some of the more notable of these institutes and their limitations may be mentioned. The Rockefeller Institute for Medical Research is doing excellent work in immunology, serology, clinical research on special diseases, structural chemistry, and various problems of body chemistry. But the emphasis is rather on the medical and pathological features of the problems than on any effort to get their solution by concerted work of the fundamental sciences of chemistry, medicine, physics and pharmacology.

The Sprague Memorial Institute covers much the same field as the Rockefeller Institute and is closely associated with the University of Chicago. It pays more attention to the chemical side of the problems, but has no buildings of its own and does not have a full-time staff, some of its workers doing teaching and some general practice.

The McCormick Institute for Infectious Diseases, The Mayo Foundation, The Hooper Foundation for Medical Research at the University of California Medical School, The Nelson Morris Memorial Institute for Medical Research at Chicago, and various institutes for the study of special diseases, such as cancer and tuberculosis, are all doing splendid and important, though limited, work. The government maintains research laboratories, but they are occupied with public problems, and the salaries do not long retain eminent scientists. In not a single instance is there an institute whose policy is a determined cooperative attack on problems of health and disease, where intensive chemical and physical research is combined with medical and biological study, all under great scientific leaders, each pre-eminent in his own field and unhampered by lack of funds, equipment, or other duties.

In the ideal institute, no one of the scientific groups should be outranked by any other. There should be complete cooperation of a staff of experts, each pre-eminent in his sphere, each having an equal voice in determining the policy of work

and the selection of problems to be solved. There should be complete and absolute separation from all individual, institutional, industrial and governmental control or influence. There must be absolute freedom to conduct investigations without accounting for time used, expense incurred, or for temporary success or failure. Undoubtedly offers will be made to have such an institute use laboratories and equipment already in existence. Unless these are given over absolutely title free, and without restrictions of any kind, they should be positively refused. If any institution should be founded so there can be no embarrassment in its policy or function, this one should be the one.

Such an institution may be made unlimited in its service and value to humanity in the solution of vital problems. The day of systematic research is here, and its opportunities must not be overlooked. The individual worker, no matter how well qualified, cannot equal the combined ability of a group of cooperating workers, each an expert in his own field.

The initiative in working out plans for a Chemo-medical Research Institute of the type we have been considering, has already been taken by the American Chemical Society in the appointment of a committee of nine of the most eminent chemists of America. John J. Abel of Johns Hopkins University; Carl Alsberg of Stanford University; R. F. Bacon of the Mellon Institute of Pittsburgh; F. R. Eldred of Indianapolis; Reid Hunt of Harvard; Treat B. Johnson of Yale; Julius Steiglitz of Chicago University; F. O. Taylor of Detroit, and Chas. H. Herty, editor of the Journal of Industrial and Engineering Chemistry.

This committee recently issued a report on "The Future Progress and Independence of American Medicine in the Age of Chemistry" which really constitutes a challenge to medicine to help in this much-needed project. Chemistry seems to be realizing more fully the need of, and taking more initiative in promoting, such an institute than does medicine. If we do not respond to this challenge, we are leaving ourselves open to perfectly just criticism. The dignity of a combined demand from both medicine and chemistry for such an organization for the benefit of humanity, cannot fail to be so forceful as to attract the practical interest and support of men who have the means and the inclination to finance philanthropic projects.

The plan of organization of this Research Institute is not yet complete. This committee of chemists has done much work but they feel they are not ready to announce their conclusions about

the make-up of an ideal institute and its departments. However, a number of personal letters from various members of that committee have expressed quite freely their personal opinions, and as these harmonize very closely, they are quite significant. The consensus of opinion thus secured indicates the feeling that there should be seven scientific divisions or departments; over each of which there would be a chief, and that these seven chiefs would constitute the staff of the institute.

These departments would be designated as follows:

1. The Department of Organic Chemistry.
2. The Department of Bio-chemistry.
3. The Department of Physical and Inorganic Chemistry.
4. The Department of Chemical Pharmacology.
5. The Department of Physical Pharmacology.
6. The Department of Bacteriology, and
7. The Department of Pathology.

As to cost, the estimates so far worked out indicate the need of about two million dollars for buildings, grounds, library and equipment; and the annual available sum of about four hundred thousand dollars, which, at an interest rate of 5 per cent, would mean the need of a permanent endowment of eight million dollars. To me, personally, the present determination of cost seems a secondary consideration. Whatever that cost may be, whether ten million or fifty million, some philanthropist will furnish the money, for no greater project has ever been proposed. Should such an institute be founded, other philanthropies, fifty years from now, will seem child's play. And as soon as we ourselves realize its value sufficiently to cooperate in the demand for its inception, the means for its construction will become available.

Cooperation, to be most impressive and forceful, should come from the American Medical Association, best it would seem by the appointment of a committee to work with the committee from the American Chemical Society, in perfecting concrete plans for its realization. The point to be stressed today is the fact that our profession, as a whole, is ready to back the founding of such an institute. There are not two opinions about the need and the expediency of the project. All that is necessary is that somewhere the initiative be taken. There should be some honor for Iowa medicine if that initiative comes from this society. To accomplish this, I move you, Mr. President, that the House of Delegates be requested to take action leading to the appointment of a committee from this Society, whose duty shall be

to carry to the American Medical Association meeting the feeling of the Iowa State Medical Society, that this Research Institute is vital to the growth of medicine, and that we are keenly anxious that the American Medical Association take immediate action looking toward its realization.

Discussion

Dr. Robert L. Parker, Des Moines—This paper certainly merits a great deal of consideration because it brings to the medical man some questions that have been under discussion for many years. The principal point emphasized by Dr. Somers, and which should be emphasized, is the delay that takes place in chemical products reaching the medical profession from a reliable source. Where do most of our newer chemical products come from at the present time? Mainly from some enterprising commercial pharmaceutical house under a patented name for which we physicians pay a royalty for a number of years. After the patent has expired the product is introduced into our Pharmacopeia under its official nomenclature, and not until then. As an illustration I will mention some of our simplest chemical products, using the proprietary name, and of course you know what the official chemical name is now. Urotropin, on which we paid a royalty for a number of years until the patent expired, and now we have hexamethylenamin. Phenazone was used before we got antipyrin, and it is the same with antifebrin, which was used for years before we had acetanilid. Those products even to the present day are promulgated to the medical profession from these pharmaceutical houses. If we had a research institute connected with a hospital, as outlined in the paper, these chemical products could be perfected and sent to the medical profession under their true chemical names and with indications for their use, and not have to be accompanied by certain paid for testimonials, as a number of our products are introduced today. The medical profession has paid too little attention to the development and revisions of the U. S. Pharmacopeia. The first Pharmacopeia was published in 1820, it has been revised every ten years, and up to the present time the medical profession has been less and less represented on that revision committee. Today it is in the hands of the pharmaceutical houses, and it is up to us as members of the profession to take an active interest in the revision of the Pharmacopeia and in improving the standards of medicine. In an institute such as that suggested by Dr. Somers these products could be perfected and introduced, much as Kendall has done at Rochester in perfecting thyroxin. He has a few milligrams of thyroxin. He is not satisfied, but has nearly perfected a process of making it synthetically. So the time will come when research laboratories can perfect these products and send them directly to us through the proper channels. I wonder how long we would have waited for our arsphenamine had it not been for the war. The arsphenamine that

has been perfected through the American Chemical Society and their representatives is far superior to the salvarsan of Berlin. Had it not been for the interest manifested by these chemists we would have been paying good royalties to the pharmaceutical houses for a patented preparation under a patented name, instead of having our arsphenamine within reach of every one. This paper is most opportune and is worthy of considerable discussion because it opens a field in which these pharmaceutical preparations can come to us in the proper manner.

Dr. Frank M. Fuller, Keokuk—I think a great many of the older men carry back in their minds to their old college days when they took the four basic branches, and of the four branches they counted chemistry as the one thing they wanted to get by if by any possible means they could get by it, secure a grade and be allowed to practice medicine with the knowledge they had. It seems to me that today this subject is coming to us as a reawakening of the profession in regard to the importance of chemistry in medicine. We talk about the organs that make up the body, we talk very wisely about the cell, and yet we forget that the cell is absolutely a chemical compound. We haven't a single thing in our bodies except hydrogen, nitrogen, phosphorus, etc., a few elements combined chemically, and it is the alteration of the chemicals in our body that makes for disease. We talk about digestion; digestion is nothing more than a chemical change regulated and controlled by that peculiar entity we call vital force. What have you in the stomach? Hydrochloric acid and certain combinations of enzymes which are nothing more than chemicals. Our food consists of fats, carbohydrates, proteins, etc., but these are nothing but chemicals. When you put them in a test-tube exactly the same changes take place there. Are we educated men, are we scientific men, when we fail to understand what these chemical changes are? We talk of digestion and the changes that take place, and yet we know nothing of the details by which these changes are made. Elimination—what is it? Cell change—what is it? A chemical combination. What do we get when we administer a drug? A drug is nothing more than a chemical. We use organic chemicals, as digitalis, we use inorganic chemicals such as mercury, iron, etc. They go through the body and undergo chemical change. Do we know what is taking place when those things go through? When making urinalysis what do we do? We produce a chemical combination. We can reduce Fehling's solution in urine when we put glucose in it. How many of you know that we are putting that through a chemical change from ferrous hydroxide to ferric hydroxide, and then to a ferric oxid which gives the red color? When making tests, how many of you know what is the basic principle of the test? What are our toxins? Chemically they are absolutely nothing but the same thing as alkaloids, they belong chemically to the same class. They are nitrogenous products. You all know that the body eliminates the drugs we put in, some through the lungs, others

through the saliva, the kidneys, the liver; but the chemical change takes place and they are eliminated and we get certain chemicals which come out through the kidneys and we find certain evidences on testing. Serology is nothing but practical chemistry applied to the practice of medicine. The opener of the discussion talked of amins. How many medical men know what an amin is? How many know what an anilid is? In using hexamethylenamin, how many of you know what it is? How many of you know whether hexamethylenamin will act chemically in an alkaline or an acid medium? I repeat, gentlemen, that this is a very practical paper, and it ought to make us think. It ought to make us humble when we consider our knowledge of chemistry and how little it is applied to the practical side, and how essential it is that we should know it if we are really scientific men.

Dr. Somers—I agree with Dr. Fuller that the consideration of this subject is mighty important to medicine. This is a day of exact science. We sometimes call it the day of electricity, but it rightly should be called a day of chemistry. The solution of our medical problems must come through the assistance of chemistry, and our knowledge of the field in which we work is so very, very limited that one does not much wonder that legislatures, as in Iowa, are willing to legalize any sort of organized quackery as the art of healing human ills. If medicine is to protect itself against the various cults, it must do it by making medicine an exact science. And that is why I am in favor of taking definite action regarding this organization, to promote the furtherance of the project which is already under way.

DIAGNOSTICS OF EPIDEMIC ENCEPHALITIS*

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Epidemic encephalitis is an acute or subacute general infection of the central nervous system resulting in irritation or destruction of any part of it. Therefore, like syphilis, it is capable of producing any neurologic, and practically any psychiatric syndrome. The brain stem and basal ganglia usually bear the brunt of the infection and therefore most cases show some sign of dysfunction of these organs. Because of this fact the disease has contributed much to our knowledge of the function of the basal ganglia. In individual cases any nervous center may receive the greatest injury. This has lent such diversity to the focal aspects of the disease that no less than forty-eight different types have been described.

Lesions involve with special predilection the tegmentum of the ponto-peduncular region and

the basal ganglia and give rise in the majority of cases to a fairly distinctive symptomatic picture characterized essentially by fever, somnolence, ocular and facial palsies, and more or less general hyperkinetic and myostatic disturbances.¹

A prodromal stage may or may not be present which varies markedly in different cases. It lasts from a few days to several months during which vague rheumatic pains, slight sore throat, chilly sensations, weakness and mild gastrointestinal upsets are present.²

The onset of the active stage is usually abrupt with an increase in the general symptoms and a rise in temperature. This rise may be of short duration but is, I think, of very constant occurrence. It rises from 99 to 102 but may reach 105 or higher. After a few days the temperature usually becomes subnormal with an occasional rise to 99° or 100° F. for a few days. The most frequent symptom at the onset is neuritic pain.² It assumes the form of cervical, brachial, trifacial or occipital neuralgia of intolerable intensity and persistent character. It is very resistant to analgesics. With it there is often slight diplopia and mental confusion. After this there is often improvement for a few days with somnolence later. Not infrequently there is marked restlessness and insomnia for a few days before the stage of somnolence is reached.

An insidious type of onset has been more frequent in some series⁴ in which slight mental confusion, indefinite cranial nerve paralyses, and neuritic pain were present for a week or so before fever, somnolence or delirium began.

A meningitic onset with headache, stiff neck and Kernig occasionally occurs due to early involvement of the meninges.

Somnolence is the most important symptom as a diagnostic criterion.² Though one of the most constant phenomena it is not present in all cases. It is a veritable twilight sleep or psychosis of closed eyes from which the patient can usually be roused with little difficulty to a nearly normal level of consciousness.⁵ Diurnal somnolence with nocturnal delirium is particularly characteristic.⁶

Deliria of varying intensity are very frequently present and are so often of the acute hallucinatory or Korsakoff types that many of my cases were at first thought to be alcoholics. Psychiatric disturbances of the "organic reaction type" are present in practically every case⁶, and may be unaccompanied by definite neurological signs. The psychiatric phenomena may resemble practically any psychosis. Irritative phenomena such as euphoria, hypomania, depression, hallucinations, delusions, Korsakoffs psychoses and hysteria oc-

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curr no less frequently than stuporous phenomena of which apathy, paralysis of the emotional field, catalepsy, catatonia and mask-like fascies are the more common.⁷

Partial paralysis of every one of the twelve pairs of cranial nerves has been described.³ Ocular palsies have been the most common, resulting in diplopia, ptosis, sluggish, irregular, unequal or fixed pupils, accommodation paralysis and bilateral sympathetic ophthalmoplegia.⁸ Definite Argyll-Robertson pupils have frequently been observed. Facial paralysis, dysarthria, and dysphagia were frequent in my twenty cases.

Involvement of the basal ganglia which occurs with equal frequency to that of the cranial nerves, results in many interesting and bizarre motor and sensory phenomena. "The corpus striatum may be regarded as a higher coordinating motor center which presides over the realm of automatic and associated movements,"⁹ and involvement of which results in myostatic disturbances such as Parkinsonian rigidity, catalepsy and catatonia and hyperkinetic phenomena such as choreiform states, myoclonia, fibrillary and fascicular twitching, and athetosis.

Injury to the optic thalamus which is the sensory counterpart of the corpus striatum results in severe neuralgic pains, ataxia, and astereognosis with occasional loss of temperature and pain sensibility.

Transient paralysis of the extremities are occasionally present as monoplegias, hemiplegias and paraplegias¹⁰ but the reflexes are relatively little altered. Babinski's sign was present in only one of my cases.

Sensory disturbances are chiefly subjective and consist usually of neuralgic pain and paresthesia. Two of my cases showed astereognosis.

Of less common symptoms may be mentioned salivation, herpes, tachycardia, tachypnea, esophogospasm, retention of urine and hiccoughing. Petechial, roseolar and vesicular rashes have occasionally occurred.²

The cerebrospinal fluid is usually under increased pressure with an increase in globulin. Normal cell counts seem to be the rule though the range has been from normal to several thousand probably depending upon the amount of meningeal involvement and the stage of the disease at which it was taken. It is practically always clear and a film does not form. Hyperglycorachia is usually, though not constantly present.¹¹ It is sterile and the Wassermann is negative. Colloidal gold shows no typical reaction. The leukocytes in the blood vary from 3,000 to 25,000, averaging 15,000.¹²

The course of the disease is variable. Most of the patients have presented an acutely developing syndrome with recovery in a week or so; but there are also many subacute cases, and some remarkably chronic cases. Von Economo has reported a case with acute onset which gradually developed more serious complications until death resulted two years later. Remittances and relapses are of very frequent occurrence, the latter often occurring weekly for long periods.

Differential diagnosis. A study of the cerebrospinal fluid easily differentiates all the meningitides except the tuberculous and mumps varieties. In the former a film usually forms and tubercle bacilli can often be found. The cell count is higher and the fluid may be turbid. The onset of epidemic encephalitis is usually more acute but in some cases there is an insidious onset and necropsies show that the two diseases are often confused even when the most careful studies have been made. Mumps does not occur a second time in the same person whereas a majority of encephalitis cases have perhaps earlier in life suffered from mumps. Parotid and submaxillary swellings do not occur in encephalitis.

Though there is considerable evidence against encephalitis being merely a nervous form of influenza, the whole matter is decidedly unsettled.²

In poliomyelitis the paralyzes are more or less complete and permanent from the beginning and are asymmetrical while in epidemic encephalitis the paralyzes are partial, transient, symmetrical and of later occurrence. The cell count in the cerebrospinal fluid and the white blood count are much higher in poliomyelitis. Encephalitis attacks persons of all ages while poliomyelitis attacks children and adolescents. In poliomyelitis the cranial nerves are rarely attacked while in epidemics of encephalitis the poliomyelitic syndromes are rare.

Typhoid fever presents a leukopenia, positive Widal, positive blood culture, splenic tumor and roseola, none of which occur in encephalitis.

Infectious arthritis and myositis are not accompanied by pathologic drowsiness and cranial nerve paralyzes. The cerebrospinal fluid is negative.

Tetanus cases give a history of a penetrating wound and are not accompanied by fever until just before death. Lethargy and ophthalmoplegias are absent.

Diphtheritic paralyzes may simulate encephalitis but the history and throat cultures should exclude it.

Multiple neuritis may cause difficulty but the sequence of paralyzes extending centripitally and

the history will usually confirm the diagnosis.

There is no satisfactory way of differentiating forms of encephalitis other than epidemic encephalitis, and, in fact they may all be produced by the same virus.

Among the intoxications which may closely resemble epidemic encephalitis are uremia, acidosis, cholemia, drug intoxications and botulism.²

Both uremia and encephalitis may have lethargy, vomiting, hiccoughs, myoclonus, choreiform movements and cerebrospinal fluid changes. The former is not accompanied by pains and fever both of which are usually present in encephalitis. Uremia patients show signs of renal insufficiency.¹³

Acidosis and cholemia give a previous history of diabetes and hepatic disease respectively and give characteristic urinary findings.

Drug intoxications are not accompanied by fever and the cerebrospinal fluid is unaltered. The history may be of value but several of my cases of encephalitis followed rapidly a drinking bout making the history very misleading.

The ophthalmoplegias of botulism resemble those of encephalitis but botulism usually occurs in several persons who have partaken of contaminated food from which bacillus botulinus can be isolated.

Vascular lesions of the brain: hemorrhage, thrombosis, embolus, softening, can usually be differentiated by the absence of fever in the beginning, and the cerebrospinal fluid though in some cases, especially when there is rapid termination in death, it will be impossible to say which we are dealing with.

Intracranial neoplasm is not accompanied by fever, is of slower development and usually causes papilledema which is extremely rare in encephalitis.

Syphilis of the nervous system in any of its forms can only be differentiated by the Wassermann test on the fluid and blood. The Argyll-Robertson pupil which was formerly supposed to be pathognomonic of syphilis is a fairly common sign in epidemic encephalitis and often remains as a residual feature long after the acute symptoms have subsided.

Of the neurologic and psychiatric states which may closely resemble encephalitis we must consider chorea, paralysis agitans, cataleptic and catatonic states, hysteria and neurasthenia.

Syndromes resembling chorea major and minor and the electrical choreas of Dubini, Hennoch and Bergeron may be simulated by encephalitis. Cranial nerve paralyzes do not occur in the

choreas and can usually be demonstrated at some time during the course of epidemic encephalitis. Without these it would be very hard to tell.

Paralysis agitans rarely begins before forty-five, is not preceded by a general infection, is not accompanied by headache, vertigo and ocular palsies, and is of slow and progressive onset. The tremor of paralysis agitans is less during voluntary movements while that of encephalitis is increased by movement. Encephalitis cases recover but paralysis agitans cases do not.¹⁴

A consideration of the mode of onset and course will rule out psychotic syndromes of the catatonic and cataleptic type, though any of these may be closely simulated by epidemic encephalitis.

Functional diseases may give many of the signs of encephalitis but in cases of the latter it is very rare not to be able to demonstrate at least some organic sign, especially about the eyes or face.

When a case presents the syndrome of fever, somnolence, cranial nerve palsies and basal ganglion disfunction there should be little difficulty in making the diagnosis but until the exact etiology is determined or some confirmatory laboratory test is discovered many cases of encephalitis are sure to present serious diagnostic difficulties.

When encephalitis is epidemic, as it is at present, the occurrence in a patient, of pathologic drowsiness, ophthalmoplegias, acutely developing Parkinsonian syndromes, catalepsy, catatonia, athetosis, chorea or myoclonia should make one think of the possible existence of the disease.

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ERRORS IN ORTHOPAEDIC DIAGNOSIS*

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When I received the invitation to deliver an address before the Tri-State Medical Society, I thought me what subject would be of most interest to a general gathering of medical men, and it seemed to me that perhaps I might better devote myself to pointing out some of the problems in diagnosis that confront the orthopaedic surgeon, than in any other way.

When I left college I felt that lateral curvature of the spine and Pott's disease were so dissimilar in their history and in the physical signs they presented, that no one with any powers of observation or any familiarity with the two diseases could make an error in the diagnosis, although my father had shown me a specimen of a lateral curvature of the spine, which he said had been thought by many observers during the man's life, to be a case of tuberculosis of the vertebræ; the angles of the ribs being mistaken for the spinous processes.

As I have grown older I have encountered a number of cases that have caused me and some of my colleagues a good deal of perplexity, and about which in some instances there has been a decided diversity of opinion as to the real nature of the disease, so that now I do not feel at all so positive as I did thirty-seven years ago as to the simplicity of diagnosis.

I had been in practice with my father some ten years when I met the first case of this kind, a girl of ten, in whom the diagnosis of lateral curvature had been made by an eminent orthopaedist, and a course of gymnastics advised, but as the child did not seem to be doing well, my father's advice was sought. He asked my opinion of this case, and on inspection it seemed to me to be a commencing scoliosis high up in the dorsal region, and I was inclined to believe the original diagnosis was correct, but finding a trifle of muscular rigidity, and a temperature of $99\frac{1}{2}$ together with some pain on certain motions, and very possibly being aided by the fact that the gymnastic treatment had given rise to discomfort, a diagnosis of tuberculosis of the second dorsal vertebræ was made, and a jacket and juremast applied instead of exercises, the case going on to a complete cure in the course of two and a half years.

I hardly need remind this gathering that at times an aneurism may erode the vertebræ so as

to cause a knuckle in the back and that the caving in of the vertebræ will pinch the intercostal nerves and give rise to pains referred to the distal extremities of the irritated nerves and thus closely resemble the deformity and symptoms of Pott's disease. Auscultation and percussion together with the history of the case should clear up the diagnosis and enable one to warn the patient of the possibility of the rupture of the aneurism, and, in suitable cases, to give him the opportunity of having an attempt made to effect a cure by medical, or if he so desires, by surgical means.

It has been my fortune to be asked in a number of instances to make a diagnosis between torticollis and inflammation of the cervical spine. Sometimes the position of the head in the two conditions is very similar, but frequently in arthritis of the upper cervical vertebræ the head looks down instead of up, and there is frequently difficulty in opening of the jaws, this latter disability often preventing one from exploring the pharynx to see whether or not a post pharyngeal abscess is present. These symptoms should rule out torticollis. There is another frequent symptom in disease in the upper two cervical vertebræ whether it be tubercular or of other origin, and that is, holding the head between the hands to prevent motion, and disinclination to lie on the back, and inability to rise from this position without holding on to the head and turning on the side.

I have several times been told by patients with disease in the atlo-axoid joint, that they were afraid they would die if I put them on their back, and they wished to lie on the face or sit upright. I believe the explanation of this phenomenon lies in the anatomical relation of these vertebræ which causes the weight of the head to push the ring of the atlas against the odontoid process of the axis while recumbent, but relieves the inflamed spots from pressure when upright or bent forward.

This inflammation in the upper cervical spine may be tubercular or it may be metastatic from a diseased tonsil, or follow an operation for suppurating mastoid, or at times upon an infected middle ear when the mastoid has not been opened. When a unilateral mastoidectomy has been done, at times the deformity may be caused by irritation and contraction of the sterno-cleido-mastoid in addition to the involvement of the cervical joints. (Friedman girl.)

In disease of the dorso-lumbar spine the head is often thrown back in order to transfer the weight of the upper part of the body from the front part of the bodies of the vertebræ to the articular processes at the rear of the vertebræ and so relieve pain, and these cases are sometimes

*Presented before the Tri-State Medical Association, Iowa, Illinois and Wisconsin.

thought to be torticollis or to be due to disease of the cervical spine, or to be caused by meningeal irritation.

At times cases will present themselves with symptoms of spinal inflammation calculated to deceive the very elect.

In the old "Daniel Webster" primer there is a picture of two women, one erect, stout and hearty; the other bent forward, flat-chested, emaciated and feeble, the very counterpart of hundreds of underfed, overworked farmers' wives throughout the country. These pictures served to point the moral that attention must be paid to sitting upright in school if the pupil wished to look like the buxom dame instead of her consumptive companion.

The look and attitude of the cadaverous woman were exactly those which is often seen in women suffering from various uterine disorders. There is a careful tread, a position that suggests a constant colic, a general uneasy look about the whole figure, and a stoop that resembles rather closely that of commencing Pott's disease in the mid-dorsal region, and when this is accompanied, as it is at times, by a spasm of certain fibers of the abdominal muscles, giving the appearance of a girdle around the waist, and also spasm of the erectorspine the similarity to Pott's disease becomes marked enough to deceive even those of experience; and I have happened to see several such cases.

In June, 1888, Miss B., aged twenty-six, consulted me for supposed disease in the spine. She was a tall, fairly well nourished girl, and gave a history of having fallen twelve years before, and of having pain and inability to walk gradually increasing since that time. At the time that she first consulted me her spine was markedly curved, but not with the usual sharp projection of spinal caries. She walked with great difficulty, complained of pain on the slightest jar, was unable to step without great pain, could not lie down or arise without aid, and when lying down was unable to turn over without assistance on account of pain. On rising from a chair she was obliged to put her hands on her knees to aid her. The left lower extremity was much smaller than the right, and sensation in it was markedly diminished. At the time of visiting me she was wearing a plaster jacket, which had been applied by an eminent surgeon in New York. After careful examination of the case I came to the conclusion that, although there was marked pain around the abdomen, pains down the legs, very great sensitiveness on the slightest movement, and marked rigidity of the spinal muscles, her symptoms were more attributable to a uterine disturbance than to ostitis of the vertebræ, and requested a vaginal examination. I found the uterus markedly retroflexed and firmly bound down in the

pelvis, and told her that when her uterus was replaced and held in its normal position, her symptoms would subside, and that I did not believe there was any disease of the vertebræ. It was not until some time after this that I learned from the patient her history, which she was very unwilling to give me at the beginning of the examination. About the age of fourteen she had a fall, striking her right hip on the curbstone. She did not feel any effects for a few days, but afterwards began to have pain on certain movements of the limb and body, when it seemed to "catch her" as she expressed it, and caused her intense pain. Several physicians examined her thinking that she had displaced the joint, but found that it was sound. After about a year her feet began to swell, and the soles, particularly the heels, became sore, swollen and painful. Then the left hip became affected as the right had been, and she was said to have sciatica, and for a number of years was obliged to use hypodermic injections of morphine to quiet the pain. The pain was worse while lying down, and often after going to bed she would be obliged to get up, and stand in a certain position for hours.

Five years before the patient consulted me, her back began to ache. Three months after the onset of this symptom she went to Philadelphia and was examined by a very prominent physician, who pronounced it disease of the spine, and ordered a leather jacket. Up to this time she had always been able to go about, and even walked quite well, but after the application of the jacket she became, as she described it, perfectly "helpless" her arms becoming so weak that she could hardly lift them. Her physician then removed the jacket and advised her to remain in bed until the spine had become consolidated. This advice she did not follow, because she suffered so much pain while lying down that she was unable to do so. She then visited New York, and while here was seen by a professor in one of the colleges, who pronounced her trouble Pott's disease, and called an other gentleman in consultation, who agreed with him in the diagnosis, and said that unless she would wear a support she would become hump-backed. He first applied a brace of his own, and finding this gave no relief, applied a Taylor brace. The latter failing to give comfort, he tried a plaster jacket, which she was enabled to "endure" for some three years. About this time the left lower extremity began to diminish in size. This history I did not learn from the patient until a number of months after first seeing her, her answers to my enquiries at that time being most vague and unsatisfactory. Having discovered the retroflexion of the uterus, I endeavored to replace the uterus and hold it in position by boroglyceride tampons, with some slight improvement. I then advised the patient to consult the late Dr. William T. Lusk, who shortened the round ligaments and held the uterus in a very satisfactory position. The pain in the back and legs began to diminish immediately after the operation, but the patient was restless and insisted upon going around too soon, and part of the

old pain returned. As this pain persisted to some degree after the application of a suitable pessary, I attributed it to neuralgia of the sacral plexus and applied intra-pelvic galvanism with relief. I also directed the patient to take regular and systematic gymnastic exercise and massage to straighten her curved spine and relax the contracted muscles of the entire anterior part of her trunk. She speedily became more upright in carriage and had steady diminution of her aches and pains. She wrote me under date of December 20, 1890: "Since my operation I have never once felt the slightest return of those attacks in my hip I suffered with so long. I am quite straight and can keep myself up better. My health is excellent, and it would be impossible for me to tell you how well I am. I have neither ache or pain. All troubles have vanished entirely. My muscular strength is much improved also."

It may be said that this case was too plain to be mistaken, and I would concur in this if it were not for the fact that she was treated for Pott's disease by three men of experience, and I was myself in doubt as to the diagnosis for some time. We often see cases that have been treated for rheumatism, neuralgia or indigestion where there is present a disease of the vertebræ, but it is rare to meet with cases such as I have just described, and I wish to call attention to the fact that there are reflex pains of uterine and ovarian origin which may at times simulate Pott's disease so closely as to be taken for it by men of experience.

On the other hand one must not forget that the presence of one disease does not prevent the person from having another, and it is always wise to examine a patient thoroughly before deciding that the first trouble that meets your eye is the sole difficulty, as the majority of mistakes in diagnosis are due to inattention, and failure to make a thorough investigation.

A patient entered a hospital complaining of pain in her back. Examination disclosed a lacerated cervix. This was repaired but the backache still continued and she returned to the hospital. A lacerated perineum was then repaired, but the backache continuing she returned a third time. The patient's back was now inspected for the first time to see why it hurt, and a large knuckle was seen in the lumbar spine. X-ray examination showed marked erosion of the vertebræ.

It is surprising how intra-pelvic irritations of one kind and another can deceive us, and yet not altogether surprising as we draw our inferences as to the location of disease, in large measure, from the patient's sensations, and their feelings of pain are often far distant from the site of the disease. I frequently emphasize this to my classes by reminding them that many people after eating

very cold ice cream have a violent pain on top of the head in some cases and in others over the eye.

I have seen a girl whose knee had been opened on the supposition that a loose body in the joint gave rise to the pain of which she complained, but nothing was found. It was then attributed to a focus of disease in the tibia (this was before x-ray days) and an exploratory operation proposed but refused by the patient, who was then referred to me by a colleague. Questioning brought out the fact that this pain ran along the course of the anterior crural nerve, and that after she had had a bad attack that dark spots like ecchymoses would appear along the course of the nerve at the places where she had complained of pain. She had great pain at each menstrual period, and was extremely neurotic. Examination revealed a pin hole os uteri, and dilatation of the uterus and intrauterine faradization relieved the pain and took away the symptoms.

Another girl had been treated for synovitis of the knee for years by an eminent surgeon. Lack of physical evidence of much disturbance in the knee led me to refer her to a gynecologist, who reported her pelvis normal. Not being convinced I made an examination myself and found it impossible to reach the uterus on account of a tight membrane like a second hymen, with a pin hole orifice situated high up in the vagina. Incising this disclosed an eroded cervix and a profuse discharge from the uterus. Dilating the cervix and scraping out the uterus cured the knee.

At times it is hard to tell whether a patient with the right thigh flexed on the abdomen with intense pain and an elevated temperature, is suffering from an appendicitis; a psoas abscess, or an acutely inflamed hip. The history should be gone into with care, and if this is done it will be pretty certain to point to appendicitis, if this is present. There will be contraction of the psoas muscle in all instances, but if the hip is not involved it will be possible to get movement in this joint without muscle spasm provided the thigh is held in such a position that the psoas is not irritated, and the hip can then be eliminated. Inspection of the spine will often show obliteration of the normal lumbar curve in cases of psoas abscess, and the location of a hard infiltrated area near the quadratus lumborum muscle will help in deciding in favor of a psoas abscess.

It may be said that such cases cannot be confused but I have seen mistakes made in the diagnosis. A girl of twelve was sent to one hospital from another with the diagnosis of acute appendicitis. The surgeon in charge of the children's service was in the operating room when she

was admitted, and the case being reported as urgent, and with a temperature of 102, he accepted the diagnosis with which she had been sent and had her placed on the operating table at once, and opened the abdomen. Finding nothing the matter with the appendix he closed the wound and put her to bed, asking me to see her two days later, her temperature still being 102, and any movement of her body extremely painful. Examination showed marked spasm of the muscles controlling the hip, and traction in the line of her deformity namely flexion, and eversion, relieved the pain. In twenty-four hours her temperature came down and she eventually recovered from the synovitis of her hip after a long period of rest and protection.

At times the attitude assumed by patients with paralysis of one kind or another may simulate Pott's disease very closely, and in this little boy with a pot belly and very rounded back the result of a post diphtheritic paralysis affecting the muscles of the back and abdomen, or in this child who was said by the neurologists to be suffering from dementia praecox. At first sight the attitude would suggest an acute inflammation of the vertebræ, but physical examination showed it perfectly easy to overcome the muscular spasm and correct his normal position without causing pain which would not have been possible had disease of the vertebræ been present. Pain along the sciatic nerve also gives rise at times to much discussion as to the cause of the pain. Is it due to a fissure in the anus, a new growth in the rectum, a retroverted uterus, or an inflammation in the sacro-iliac joint, or in the lumbo sacral articulation? As in most instances careful investigation of the patient after having taken time to secure an accurate history, which parenthetically is often extremely difficult as people without intention to deceive are frequently most inaccurate in their statements, but, as I say, attention to the history and careful inspection of the patient will usually quickly decide the question.

Now-a-days every one wants to confirm all joint lesions by an x-ray picture, but in this part of the body to be of use the x-ray should be stereoscopic as there may be a distinct displacement of the fifth lumbar vertebra as shown in the stereoscope and yet the flat x-ray fails to reveal any abnormality.

The older I grow the more I feel that it is very important to secure a correct history, and it is comparatively rare to find an interne in the hospital who can ascertain from the patient the points in the history that are of chief moment in directing attention to the true seat of the trouble,

although he has been most painstaking in his inquiries as to many facts which have no bearing on the case at all. I frequently find that by letting a patient tell his story in his own way that I get information that I would not have secured had I insisted in doing all the talking myself and only allowed him to answer like a witness in court under a cross examination.

There are many other problems that vex the orthopaedist, but those that I have brought to your notice are among the most frequent, and I will not burden you by reciting any others.

CANCER OF THE BREAST WITH REPORT OF CASE*

HANS HANSEN, B.S., PH.G., M.D., Lt.-Col.
M.R.C., U. S. Army, Logan

The subject which I am bringing before you today is far from being new, yet it is of so great an importance that our time is not lost if we carefully discuss it.

Hippocrates in his Aphorisms stated, "It is better not to apply any treatment in cases of 'occult' cancer; for if treated the patients will die quickly; but if not treated they hold out for a long time."

The ancient commentators explain, that by "occult" may be meant either "not ulcerated or "deep seated." The latter seems to be the better interpretation, and then the meaning will be, that when the cancer is superficial, it admits of being removed by an operation, that is to say by the knife or the cautery; but when the disease is deep seated, it is better to let it alone. This dictum in medical lore held sway for many centuries.

It is of interest to read the Diagnosis and Treatment of Cancer of the Breast as late as 1881, by Dr. John B. Roberts, lecturer on anatomy and operative surgery in the Philadelphia School of Anatomy.

In discussing tumors of the breast he states: If the tumor is cancerous the open surface or discharging orifice will suggest its nature, and the integument itself or the margins of the wound will be infiltrated with cancerous material, the latter presenting the thickened, indurated, and everted margin so characteristic of the cancerous ulcer, but if the tumor is innocent the tissues never infiltrate, but separate or displace in a mechanical way.

The operation is described as follows:

*Read before Harrison County Medical Society, Persia, Iowa, December 10, 1922.

The patient should be placed on her back with the shoulders of the affected side raised by a pillow and the arm drawn out at a right angle to the body. The incision should be elliptical and made in a line parallel with the fibres of the pectoral muscle, and when the skin is diseased it should be removed. The inner or sternal incision should then be made, and bleeding controlled by the pressure of the fingers of an assistant.

The second incision may then follow, and should be made down to the free border of the pectoral muscle. The whole tumor by these means is thus readily excised, a few touches of the scalpel dissecting it off the pectoral muscle, the axillary angle of the tumor should be divided last, as it usually contains the chief blood-vessels of the gland. All bleeding vessels should be twisted, the surface of the wound cleaned, its edges well adjusted, a drainage tube introduced at the most dependent part, and steady pressure applied by means of pads of lint gauze or cotton.

On amputation of the breast he states: "Out of 133 cases of cancer in which amputation was performed nine died, while in three only could the death be ascribed to the operation. One died from pyemia, on the thirty-fifth day; one from erysipelas contracted several months after the operation; two from acute bronchitis three weeks and one month after the operation, one from profuse diarrhea, on the eighth day, probably pyemic; one from hemoptysis in the third week; two from exhaustion after a return of the growth, in three and six months, and one from actual decline on the third day." Notice that he does not say what happened to the 124 cases operated on after six months.'

The prevention of carcinoma of the breast consists in (1) preventing and promptly curing mastitis; (2) by removing benign growths; (3) preventing mechanical friction such as is produced by a washboard while washing; (4) by preserving the general health.

All benign growths should be promptly removed and examined microscopically. They will surely never become less benign, and there is a great danger of such growths becoming malignant.

In a series of 102 breast tumors analyzed by R. and M. Winslow, tabulated 100 examples, 63 carcinomata, 3 sarcomata, 20 fibroadenomata, 1 pericanalicular myxoma, 5 cystic fibroadenomata, 2 galactoceles, 3 tuberculous mastitis and 3 abscesses.

Before attempting the operation for carcinoma of the breast one should have a clear conception of the lymphatics of the breast and axilla.

It should be borne in mind that while certain lymphatic chains drain certain areas of the breast, they all anastomose and currents to and fro may carry their contents in any direction. Cancer cells liberated from the breast usually first become

caught in the mesh-work of the lymphatic glands, but they may become engaged in the finer lymphatic radicles.

The lymphatics of the skin are composed of two networks, one superimposed over the other.

From each network larger trunks lead to the axilla—lymph channels follow all of the blood-vessels. In the muscles, one set of lymph-vessels follow the muscle fibres toward the sternum, near the margin of which they perforate the intercostal spaces, and empty into the mediastinal lymphatics, which are rich in glands.

The lymphatics of the upper part of the pectoralis major at its inner part drain over the clavicle and empty into the supraclavicular glands. There exist intimate connection between the lower and inner quadrants of the breast and the upper abdomen through lymphatic channels which pass downward to the epigastrium back to the peritoneum, through the suspensory ligaments and subperitoneal spaces to the liver.

The lymphatics from the breast itself pass toward the surface and communicate with the superficial lymphatics. The main vessels run toward the axilla. The deep vessels lie on the fascia of the pectoralis major, and communicate with the muscular lymphatics.

Some lymphatics from the deep parts of the breast accompany the perforating branches of the internal mammary vessels and lead to the glands of the mediastinum, others pass into the posterior mediastinum, others again follow the long thoracic to the side of the chest and axilla.

The lymphatic glands are especially numerous in the axilla. They lie in close relation to the axillary vein, and follow it over the first rib into the neck and thorax. Five to six glands lie close to the axillary vein, and rarely have any glands intervening between them and the breast. They are connected with the chain of eight to twelve glands lying along the axillary vein, which have other glands intervening between them and the breast. A group lies under the scapular attachment of the pectoralis minor, close to the upper ribs another group lies in loose connective tissue in front of the outer border of the scapula, the subscapularis and the latissimus dorsi, others lie under the pectoralis major and communicate with the subclavian glands.

The supraclavicular triangle contains glands which receive lymph through vessels passing upward beneath the clavicle.

Keeping in mind the lymphatic distribution of the breast it stands to reason that the hope of cure rests upon early and complete extirpation of the disease while yet it remains localized in one spot.

To withhold early operation is to condemn the patient to a wretched and unjustifiable death. To await an absolutely accurate diagnosis is a surgical crime.

The age of the patient should not deter us from making the most careful examination. Only recently I had a case of carcinoma of the right breast in a single girl twenty-seven years of age. (I will later refer to this case.)

Prognosis influences treatment; death results in nearly 100 per cent within three years without operation. Taking a six year standard of cure, the results of a representative series of cases operated by various surgeons are as follows: All cases 39.8 per cent cured; gland infected cases 18.3 per cent; gland free cases 62.9 per cent. The prognosis is worst for carcinoma simplex 32.9 per cent, better for a "squamous" 40 per cent, better still for carcinoma simplex with overgrowth of duct epithelium 57.1 per cent, and very good for papillary carcinoma (100 per cent).

Adhesion to muscle is a bad sign, the difference in the percentage of cures between adherent and free cases being nearly thirty. The prognosis is best in people of normal fatness; very bad in the obese, and bad in the spare patients.

The cases in which operation is contraindicated are those (1) in which there are metastases; along the whole length of the subclavian vein or in the supraclavicular triangle of the neck; (2) those with wide skin infiltration; (3) those with involvement of chest wall as evidenced by fixedness; (4) cases with remote metastases; (5) cases involving through metastases in the other breast.

The incidence of cancer in the second breast after radical removal has been studied by A. R. Kilgore based on 1,100 histories, and in 659 the results for three years or more were known. In the entire series thirty-seven instances in both breasts were recorded. In thirteen, the patient presented herself with both breasts already involved, the histories in the majority suggesting that cancer arose in one breast and metastasized to the other, rather than that tumors arose simultaneously and independently in each breast.

From this study Kilgore is of the opinion that the patient who has had one breast amputated for cancer is, if she survives five years, from three to four times more likely to develop cancer in the second breast than a normal woman of the same age in either of her two breasts.

The majority of cancers in the second breasts, arising three or more years after first operation, behave clinically like primary new growths, not like metastases from the other breast.

This suggests that if the 257 women living three years after the first operation had submitted to prophylactic resection of the second breast, twelve cancers, and ten deaths from cancer in the second breast would have been prevented. One patient in five has no involvement of the axilla at the first operation, and if these patients had their second breast excised, three out of four late cancers in second breast would be prevented.

Operation—No sacrifice in the way of time, cosmetic results, or utility, is too great to make for a cure of the patient, but unnecessary mutilation is to be avoided.

Properly planned incisions with undermining of the skin and at times mobilizing of opposite breast will make it possible to close nearly all of these wounds. The posterior thoracic nerve should be preserved. The flap lining axillary space should be held simply in the apex by stitches to avoid subsequent inability to elevate the arm.

Complete hemastasis adds to the safety and convenience and will often do away with the necessity for drainage.

The handling, tearing and bruising of tissues should be avoided. The operation to be effective consists in thorough axillary dissection, the removal of the skin some three to four inches beyond the cancerous tumor, the dissection should slant away from the cancer, fat and connective tissues. The pectoralis major and minor should be removed: No ironclad rule should be laid down, as the operation depends somewhat as to whether the cancer is located on the upper inner, upper outer, lower inner or lower outer quadrant of the chest.

Halsted advice in all cancers where the disease is confined to the breast and its accessible lymph channels, whether axilla is infected or not, the supraclavicular glands should be removed. About two weeks following the operation the patient should be subjected to two weeks radiotherapy, or this might be substituted by x-ray treatment.

Patient is then observed once a month, and later at later intervals.

Miss C., age twenty-seven, unmarried presented the following personal history. Prior to her present trouble she had always enjoyed excellent health, the only diseases she has had were measles and whooping cough.

In May, 1922, she noticed a small growth in her right breast about the size of a hazelnut, this gave her no trouble except at her menstrual period when she experienced a slight tingling in and about this growth. When she visited me November 21, 1922, the growth had increased to the size of a large orange, was situated in the outer upper quadrant of

the right breast, the axillary lymphatics were also found involved. History of inflammation of the nipple or injury to the breast was negative, however, she volunteered the information that a few years ago she assisted with the work on her father's farm and that she was in the habit of placing the pitch-fork-handle against her breast when she used this implement, also when she mowed the lawn she placed the lawn mower handle against her breast, however she never felt bruised or sore breast from this procedure.

Her family history is as follows: She has one sister twenty-four years of age in good health, there has not been other children in the family. Father died from pernicious anemia at forty-five, his mother died at thirty-five from Brights disease, his father is living, age about ninety, one sister died at nine from inflammatory rheumatism, the other sister is about fifty-five years of age and in good health.

Mother living, age fifty-four, she had an operation five years ago for ovarian cyst, but she now enjoys good health. She has had only two children and no miscarriages. Her father and mother died at eighty-five years of age, causes of death not known. She has four brothers living, all in good health, one sister is living and in good health. One sister died at eighteen from tuberculous adenitis, another sister died at fifty-two from what was believed to be cancer of stomach or gall-bladder. Nothing further of interest was obtained from the family history.

I made a provisional diagnosis of cancer of the breast. She was operated on by Dr. M. W. Flothow and myself November 23, the tumor was removed for pathological examination, our diagnosis was confirmed by the pathologist, and we proceeded to perform the classifical operation for carcinoma of the breast.

My reason for reporting this case is only to impress the fact that in all ages all abnormalities of the breasts should be painstakingly observed.

INCREASE IN HOSPITAL FEES

Dr. E. Mac D. Stanton of Schenectady, N. Y., in a paper read before the fourth district, branch of the Medical Society of the State of New York, and published in the New York State Journal of Medicine, April, 1923, presents some interesting figures relating to the modern hospitalization of patients in cities of from 75,000 to 100,000. in which he shows that the increase in expense in 1922 over 1913 is 227 per cent.

Two hospitals are referred to—Cahoes Hospital, Cahoes, N. Y. and Ellis Hospital, Schenectady, N. Y. The itemized account of the hospital fees appear as follows:

Per Week 1913	
Ambulance	\$ 2.00
Room	15.00

Operating room	5.00
Pupil nurse	17.50
<hr/>	
	\$39.50

Per Week 1922	
Ambulance	4.00
Room	25.00
Operating room.....	15.00
Special nurse.....	70.00
Nurses' board	14.00
<hr/>	
	\$129.00

Ellis Hospital, Schenectady, N. Y., 1912

Ward	\$ 7.00
Children's ward	7.00
Semi-private	10.00
Baby ward	6.00
Private rooms	12.50 to 25.00
Operating room	5.00
Pupil special	17.50
Graduate special	25 00
Nurses' board	5.00
Ambulance	2.00

1922

Ward	\$14.00
Children's ward	15.00
Baby ward	12.00
Semi-private	14.00 to 15.00
Private rooms	21.00 to 35.00
Operating room	7.00 to 15.00
Pupil special	not furnished
Graduate special	70.00
Nurses' board	14.00
Ambulance	4.00

Dr. Stanton states: "This represents an increase of 227 per cent, which is out of all proportion to any increase in the cost of living and also out of all proportion to any increased ability on the part of patients to pay."

Hospital treatment of patients has become so well established in the mind of physicians that doctors hesitate to treat patients in their homes, that all seriously sick patients, at least, be sent to the hospital, and in many cases this is absolutely necessary, but what must be the ultimate effect upon the physicians' practice when there are so many "new school" doctors that can "cure" all kinds of sickness without inflicting such enormous bills? It seems apparent that some form of endowment or public support must be provided. There is no doubt that greater economy of administration could be effected by more efficient management; better trained superintendents should be employed. One need only observe the daily work in a hospital to be convinced that wasteful methods are generally employed.

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TRI-STATE MEDICAL ASSOCIATION MEETING AT DES MOINES

October 29, 30, 31 and November 1

We urge our readers to examine and read carefully the October number of the Journal—at least, the part that relates to the meeting of the Tri-State Medical Association—Iowa, Illinois and Wisconsin.

This will be one of the most important medical meetings ever held in Iowa. We have not seen the program, but have been assured that some of the most famous internists, surgeons and research workers of America will appear. While great men we would like to see and hear will be present, we of Iowa, Illinois and Wisconsin will constitute the great body of the convention. We have attended nearly all of these meetings and found them the most democratic of gatherings. The clinics, the scientific and social features are most interesting.

The Polk County Medical Society has appointed active committees which will provide for every feature of the meeting. It will be no place for loafers, every one in attendance is supposed to take an active part. The work begins at daylight and continues until early candle-light, and after. Dr. Peck, general manager, will be present and will see to it that every man is in place at the appointed hour and minute.

DIAGNOSIS, FROM A MEDICO-LEGAL POINT OF VIEW

The May number of the "Federation Bulletin" presents an extended report of a decision of the Wisconsin Supreme Court in the case of Kuechler vs. Volgmann, a chiropractor, in which the question of diagnosis enters as the controlling factor.

It appears that Kuechler sustained an injury to the head and later developed brain symptoms. He now came under Volgmann, a chiropractor, who treated him according to chiropractor methods for a period of eight months. At Augustana Hospital it was found that the man was suffering from a tumor of the brain, which could only be treated by a decompression operation.

A suit for \$25,000 was instituted. The defense contended that "diagnosis, if it can be so called, consists solely and entirely in determining which of the vertebrae of the spine are out of alignment, to what extent and in what direction." It was held that "when a patient goes to a chiropractor, he goes for chiropractic service alone. He does not expect or desire the services of a surgeon or doctor of medicine."

It will be seen that the defendant relied on the general rule that the physician who treated the case according to the methods of the system of medicine he represented, was not liable for the results, and, acting according to this rule, Judge E. B. Belden of the circuit court, sustained the demurrer to the complaint. On appeal, Chief Justice A. D. Vinje of the supreme court, reviewed this rule, but held that while Judge Belden held correctly so far as treatment was concerned, but according to the laws of Wisconsin "malpractice may consist in a lack of skill or care in diagnosis as well as treatment."

Judge Vinje further holds: "It is a familiar principle that a complaint must be liberally construed in favor of the pleader. By examining the complaint set out in the statement of facts it will be found that the pleader says that through a lack of skill and care, the defendant negligently undertook to treat plaintiff for a malady from which he was not suffering, and that had the defendant possessed ordinary skill or ability in treating disease, he would by the exercise of ordinary care have known the true cause of his ailment."

We present this abstract for the purpose of impressing on the minds of all classes of practitioners that there is no exception to liability for error of diagnosis. We are confronted in a very large proportion of our cases with the allegation that a careless diagnosis is the fundamental cause

of the malpractice. It is to be observed, however, that the rule of law does not require the highest degree of skill in diagnosis, only the exercise of that degree of care, diligence, judgment and skill which other physicians of good standing of the same school or system of practice usually exercise in the same or similar localities, under like or similar circumstances, having due regard for the advanced state of the medical profession at the time in question.

It must be observed also that when the claim is made of negligent and unskillful diagnosis and treatment, that evidence must be presented sufficient to establish this rule, not in a general way, but specifically, so far as the particular case is concerned.

The careless manner of making an examination with reference to a diagnosis is illustrated in a case reversed by the supreme court of Illinois, in which an x-ray film was introduced in a personal injury case. The lower court was held in error in admitting a roentgenogram which could not be properly verified. The supreme court, after setting forth the rule in relation to the accuracy of the picture, held: "Applying these well established rules to the facts in this case, it is apparent that the plaintiff's failure to establish the preliminary requirements necessary to make the roentgen-ray film admissible. The witness did not state that he saw the condition of the plaintiff's skull, or that the film corrected represented this condition. Nor did he state how the film was taken, or that he had ever had any previous experience whatever with a roentgen-ray machine, or that he had ever made a roentgen-ray photograph, or that he knew anything about how they ought to be made, or that the roentgen-ray machine used by him was accurate, or that it was in working condition at the time the exposure was made, or whether he had ever checked a picture made by his machine with a condition seen by his eye with the use of the fluoroscope, to determine whether the machine portrayed the internal condition of the part of the body under investigation."

In the Wisconsin case the supreme court held: "It is clear from the allegations of the complaint that defendant undertook to *diagnose*, as well as to treat, the disease. Diagnosis is ordinarily assumed and performed by licensed medical or osteopathic physicians, but it may be assumed by others and it is held that the practice of chiropractic is the practice of medicine." By the court: "Order reversed and cause remanded with directions to over-rule the demurrer and for further proceedings according to law."

This ruling of the Wisconsin Supreme Court will be of far-reaching effect and should constantly be kept in mind and it should not be forgotten that questions of *diagnosis* are important factors in malpractice cases.

EDITORIAL CO-OPERATION

The Atlantic Medical Journal (Pennsylvania and Delaware) approves some plan by which a State Medical Editors' Association may be formed and meetings held at the time and in conjunction with the State Secretaries' Conference.

The idea seems a good one, leading to a closer cooperation on the part of the State Medical Journals, especially in view of the fact that most of the state secretaries are connected in one way or another with the state journals, either as editors or associates, and always interested.

We have been informed that editors have been left out in the interest of economy. In former years the editors of state medical journals were included with the secretaries. We quite agree with the Atlantic Medical Journal that isolation on the part of the state journals may be unfortunate.

HAY FEVER

Hay fever belongs to a group of diseases in which the symptoms are brought about by a systemic hypersensitiveness to certain foreign proteins. The group has, but recently, been separated from the rest of the human ailments, and includes, at present, besides the so-called hay fever, such disorders as serum sickness, true bronchial asthma, food rashes, certain forms of rhinitis and conjunctivitis, as well as some gastrointestinal disturbances. These diseases all have the following common characteristics: (1) They are of an allergic nature, i. e., the direct cause is a foreign protein. (2) All have a distinct hereditary predisposition—over 50 per cent give a clear history of some one in the family having one or more of the disorders in this group. (3) All give a positive skin test with offending pollens and usually with a number of others. (4) In all instances the anaphylactic symptoms promptly disappear when the responsible protein is prevented from entering the body.

Hay fever is a misnomer, a much more correct appellation would be pollen catarrh because the exciting cause is always airborne pollen from regional flowering plants. In our state the pollen catarrh season begins in the latter part of March

and lasts until the first frost. The causative pollen comes from three different classes of plants.

The early spring variety is due to the pollen of a number of trees. Perhaps the most common offender with us is the poplar family. Since the severity of the symptoms is largely dependent upon the amount of the pollen traveling in the air. It might be supposed that tree hay fever would tend to be severe for each tree furnishes an enormous amount of pollen which is given to the air, relatively high up, and is therefore spread over large areas. But practically this type of disease is of no importance since the fertilization season of each tree lasts but a couple of days.

The late spring type of this disease is principally due to timothy pollen in this part of the country. Other grasses play an insignificant role. Timothy pollen is active in producing pollen catarrh because the flowering season lasts for some time and also because the flower is carried on the top of a tall stem above the rest of the grass, hence it becomes relatively easy for the pollen to "take the air." The grass caused pollen catarrh is light here because the timothy is not abundant, hence the amount of pollen, carried in the air, is never very great. For the same reason, desensitization, by repeated doses of the specific pollen extract, is very successful. Most of the patients getting the proper treatment are relieved.

The late summer and fall pollen catarrh is everywhere more severe than the other kinds and it is undoubtedly worse in Iowa than any other place. For, in our fertile soil and superb corn raising weather, the ragweed verily grows from a tiny seed to such size that the birds of the air may, and indeed, do build their nests among its branches. The causative pollen comes, as has already been indicated, from the ragweed or from related plants such as the daisy or the golden rod. But the rag weed is the real arch fiend for the following reasons: It is a giant weed, (it often reaches and passes six feet in this state) and its great number of branches are heavily laden with flowers containing enormous numbers of pollen granules; these are of light weight and are easily picked up and carried by the breezes that blow in the autumn. Hence one can frequently see greenish clouds of ragweed pollen traveling on to make misery for the susceptible individual. Furthermore the flowering season of this fittest among all the weeds, goes on interruptedly from about the sixth of August to the first frost. And, finally, the surface of each germ cell, instead of being smooth, as is the case with most other varieties of pollen, is studied with the most excel-

lent tools for effectively digging in, viz.—numerous sharp spicules.

The only sensible way to act in the face of such an enemy is for the chosen ones to "flee to the mountains" or, in this case, the deep blue sea "where there aint no ragweed pollen and a man can breathe in peace." But, to do so, is often, and for obvious reasons, impossible. Therefore, the most effective and all round prophylaxis would be for farmers and victims to unite and eradicate the weed from our midst. This will undoubtedly be done when the people, as a whole, realize the suffering and the outlay of money which the ragweed brings about season by season.

The desensitization treatment, by repeated injection of pollen extracts, has been tried long enough now to form a proper estimate of its value and this much can be stated about it: if the treatment is given properly, i. e., 15-25 properly sized doses 4 to 7 days apart before the season opens, some patients will be cured, and still more will be cured if the treatment is re-administered the next year. The percentages of such vary according to the severity of the season from 5 to 20 per cent. A large number, about 60 to 75 per cent, will be more or less relieved and the remainder are entirely unaffected. One is, therefore, justified in trying the treatment, provided the patient is willing to spend his time and money in the face of such uncertainties.

The various pollen extracts, put on the market by our reputable drug houses, are as potent as any for the use in treatment as well as sensitization tests.

During the actual course of the disease much can be done for the patient in the way of ameliorating his suffering. Thus hypodermic injection of .5 c.c. adrenalin chloride in 1-1000 dilution will relieve the asthma. This may be given as often as once an hour if needed. Then, too, hypernephren, instilled into the eyes, will effectively relieve eye and nose symptoms for varying periods of time. Much relief may also be obtained by avoiding country drives, or when drives must be taken, by driving after a rain and masked. Nights may be made more bearable if the bedroom windows have been kept shut all day and wet sheets hung over open windows at night.

Glomset.

SMALL-POX AND VACCINATION

Benjamin White, Ph.D., Boston, director of biologic laboratories, department of public health, in the Boston Medical and Surgical Journal, April 12, 1923, presents some extremely interest-

ing historical facts in relation to the morbidity and mortality of small-pox in Boston.

Small-pox in the year 1721 attacked 5,989 persons out of 11,000 inhabitants of Boston, with a mortality of 840. In 1730, 500 out of 4,000 cases. In the early part of the nineteenth century in Great Britain 45,000 persons died annually of small-pox.

Dr. White quotes Lord Macaulay as follows:

The small-pox was always present, filling the church yards with corpses, tormenting with constant fear all whom it had not yet stricken, leaving on those whose lives it spared the hideous trace of its power, turning the babe into a changeling at which the mother shuddered, and making the eyes and cheeks of the betrothed maiden objects of horror to the lover.

In the year 1922 with compulsory vaccination, the state of Massachusetts, with a population of nearly 4,000,000, there were only two cases of small-pox and no deaths. Comments are unnecessary. It is passing human understanding why states and cities will persist in neglecting so easy and efficient a means of preventing this dire disease, but so it is. Only recall the experience of Kansas City scarcely a year ago, and other cities which we need not mention. Think of the awful responsibility of men and women who devote their lives in propaganda to prevent and discourage vaccination.

THE COLLEGE OF ELECTRONIC MEDICINE, CHATTANOOGA BRANCH

We are informed editorially by the Journal of the Medical Association of Georgia, of such an establishment. We take it that any number of branches may be established by paying \$377.50 cash and monthly installments of \$5. It appears that oscilloclasts do the work, will make an "accurate and scientific diagnosis of serious maladies and baffling disease conditions, even in their incipency." Through the generous offer of Abrams this method of practice may be extended and thus physicians relieved of many difficulties.

In this connection we may note the action of the Los Angeles County Medical Association published in the Bulletin of the Society. The following resolution was adopted at the meeting of the board of councilors held March 12, 1923:

"It shall be the sense of the Council that Abrams' method of diagnosis is a fraud. Any physician practicing this method is ineligible to membership. If a member, he shall immediately cease this method of practice or charges of unethical conduct shall be preferred against him."

DIPHTHERIA HOLDS THIRD PLACE AMONG COMMUNICABLE DISEASE

It seems rather strange that with the horrible history of diphtheria, it should still hold third place among communicable diseases and should kill from 12,000 to 15,00 persons in the United States annually in face of the fact that diphtheria antitoxin is a specific cure for diphtheria—if used early—and that the Schick test demonstrates who is susceptible and who is immune. There appears to be but little reduction in the death rate from diphtheria in the past fifteen or twenty years. There were reported in the United States during 1920 146,006 cases of diphtheria, with 13,617 deaths.

This unfortunate state of affairs is largely due to indifference, and in some degree, to the teaching and propaganda of certain dangerous cults. Here is a field for vigorous health activities in bringing these facts home to the general public.

DR. W. W. KEEN

Dr. W. W. Keen, who graduated in 1859, is now in London to attend the meeting of the International Surgical Society and took a part in the discussion of War Surgery and emphasized the "horrible surgery" of the American Civil War—in which he participated as an army surgeon—and contrasted it with the surgery of the World War of 1914-1918.

It may not fall to many of us to attend the International Surgical Society when we are eighty-six years of age, but it falls to us to express our appreciation of the worth of this great surgeon, who still maintains an active interest in the most advanced surgical science.

CHIROPRACTORS AND MEDICAL DEFENSE

We never turn the pages of the Journal of the Indiana State Medical Association without finding some valuable information touching matters of interest, sometimes near at home. It is interesting to know that even chiropractors recognize fallibility and are liable to prosecution by dissatisfied patients for malpractice. This is, of course, not due to failure of diagnosis or treatment, but due to the conduct of vicious and designing persons.

It probably is not generally known that chiropractors, unable to obtain medical defense contracts from any of the companies dealing with reputable medical men, have organized a defense association of their own with a capital of one hundred thousand

dollars. The home office of the association is Ft. Wayne, Indiana, and the officers are J. I. Evans, president; F. W. Brokaw, secretary; J. C. Hutzeli, treasurer; E. C. Barber, manager of sales, and the general counsel consists of attorneys Albert E. Thomas, Louis F. Crosby and Benjamin J. Brown.

The object of this association is to furnish counsel and defense contracts. We publish the names of the officers and attorneys connected with the association for the reason that we feel that our readers ought to know who among our business and professional are aiding and defending the law-breaking chiropractors who are preying upon the sick and suffering and generally deluding the public.

INCREASING MORTALITY FROM DIABETES

The Statistical Bulletin of the Metropolitan Life Insurance Company publishes some interesting information on this subject.

A publication recently issued by the Census Bureau shows very striking geographical differences in the mortality rate from diabetes. New York state, for example, shows the highest white incidence with a rate of nearly 22 per 100,000. In Tennessee the lowest rate for the white population is found, namely, slightly over 6 per 100,000. The figures vary interestingly between these two extremes in the several parts of the country. The data for the industrial policyholders of the Metropolitan for a series of years including 1922, show very much the same geographical distribution as those described for the general population. The states of New York, New Jersey, Massachusetts and Pennsylvania show very high rates. The lowest figures are found in the southern and western states.

The general tendency of diabetes mortality has been upward for fully twenty years. Since 1919 the rise has been continuous and considerable.

DR. W. J. MAYO RECEIVES HIGH HONORS

At the recent commencement McGill University, Montreal, conferred upon Dr. W. J. Mayo, the honorary doctorate of laws.

Dr. Mayo is now in Europe where the Degree of Master of Surgery will be conferred on him by Trinity College, the University of Dublin, and the University of Leeds will confer the degree of Doctor of Science.

The great universities of the world have conferred on Dr. Mayo their highest degrees in appreciation of the work he has done in the advancement of the science and art of surgery. Every American entertains an honest and sincere pride in the great work accomplished by Dr. W. J. Mayo and Dr. C. H. Mayo personally and under their direction, be he practitioner or layman.

IOWA STATE UNIVERSITY NEWS NOTES

Dr. Don M. Griswold

Dr. M. J. Foster, resident physician in the department of pediatrics of the State University of Iowa this past year, has accepted a position in Cleveland General Hospital at Cleveland, Ohio, for the following year.

Dr. A. H. Byfield, professor and chief of the department of pediatrics of the State University of Iowa, while at Seattle and San Francisco in June, delivered a number of addresses and papers before the local medical associations, and the American Medical Association. He gave a paper entitled "Certain Theoretical Considerations Concerning Breast Feeding" before the North Pacific Pediatric Society at Seattle, Washington; a paper entitled "The Nutritional Viewpoint in the Feeding of Infants and Children," and a paper entitled "The Systemic Manifestation of Focal Infection in Childhood" before the Pacific Northwest Medical Association of the Northwest at Seattle, Washington. The paper given before the American Medical Association, San Francisco, is entitled "The Role of Parental Nutrition in the Causation of Rickets."

Dr. Lydia M. O'Harrow, assistant director of the student health department, State University of Iowa, has resigned to accept a position as a member of the physical education department of Smith College, Northampton, Massachusetts.

Dr. and Mrs. M. R. French, State University of Iowa, announce the arrival of a seven pound girl, July 14, 1923.

Professor Edward H. Lauer has been appointed director of the extension division of the State University of Iowa, professor O. E. Klingaman, former director, having recently resigned, to accept a position in New York City. Under the provision of the Shepard-Towner bill, clinics have been held by this division in thirty-five counties of the state and in every county there has been active cooperation with each county medical society. The medical staff at the present time is composed of three pediatricians: Dr. J. W. Prentice, Dr. T. B. Gay of Johns Hopkins, and Dr. Fred Gerkin of the State University of Iowa. Three women physicians: Dr. Josephine A. Rust, Clear Lake; Dr. Valuro Powell, Red Oak, and Dr. Helen Johnston, Des Moines. One obstetrician, Dr. L. R. Randal, State University of Iowa, will meet with the various county medical societies at their meetings upon request, either to the director of the extension division of the State University of Iowa, or to Dr. F. E. Sampson, field director, Field Activities Committee, 510 Century building, Des Moines.

The patients at the State Sanatorium at Oakdale, situated a few miles from Iowa City, have established

a bi-weekly publication which they describe as the "Stethoscope, which hears all and tells all." This paper started as a "not a profit" proposition but rather as a means of stimulating a general interest in the whole institution. The entire paper, except Dr. H. V. Scarborough's, the superintendent's department, which is thoroughly instructive in nature, is filled with bits of information concerning the patients.

Announcement has been received of the recent marriage of Miss Marian Holmes and Dr. David Gallahen. Mrs. Gallahen was graduated from the Nurses' Training School of the University Hospital in 1920. Dr. Gallahen received his degree in the College of Medicine in June and is at present resident physician in the Miller Hospital at St. Paul, Minnesota.

Dr. J. D. Boyd of the department of internal medicine, State University of Iowa, gave a paper before the Muscatine County Medical Society in June on "The Modern Treatment of Diabetes." He also delivered a paper on the same subject before the Van Buren County Medical Society on July 17th at Anderson's grove near Keosauqua.

The classes in the modern treatment of diabetes conducted for general practitioners of the state of Iowa by the department of internal medicine, State University of Iowa, have been filled to overflowing. The course consists of one week to ten days' instruction to a class of three physicians in the theoretical and laboratory methods as well as in dietetic treatment of the disease. Classes of one week's instruction will be continued until September 24, 1923.

GIVES MEDICAL LIBRARY

The medical library of Sir Norman Walker of Edinburgh University, Scotland, has been offered to the State University of Iowa College of Medicine, Iowa City, through Dr. Walter L. Bierring, Des Moines. The gift has been accepted by the University. Sir Norman visited the university two years ago as a member of a commission of European physicians and surgeons and was favorably impressed by the medical work being done at the University.

CHICAGO COUNCIL OF MEDICAL WOMEN ORGANIZE

In order to collate valuable clinical experience and to promote fellowship, another medical society has been organized, the Chicago Council of Medical Women. Membership is restricted to women holding a license to practice medicine, and the council is limited to seventy-five active members. The incorporators are Anna E. Blount, Alice Conklin, Effa V. Davis, Mary E. Hanks, and Lena K. Sadler. The management is represented by Anna E. Blount, president; Lena K. Sadler, secretary; Eliza R. Morse,

treasurer; Alice Conklin, Effa V. Davis and Helga Ruud, directors; Sarah M. Hobson, editor. Eighteen charter members are enrolled.

Journal of Iowa State Medical Society,
Des Moines, Iowa.

Hoping my experience May 13 will save more babies through injecting adrenalin into the heart near the apex of a new born baby that failed to breathe by using all known methods for more than ten minutes. Two minims of 1/200 per cent adrenalin was injected with hyperdermic needle into the heart. Within fifteen seconds the first efforts at breathing were noticed and within five minutes thereafter, this baby boy was placed beside his brother, both twins crying lustily. Now, twenty-four hours later, they are in perfect condition.

As witness to this treatment was the attending physician Dr. J. M. Cosey and Sister Engelbertha (who baptised the baby, thinking it was dead), and the mother of the babies, Mrs. Lewis Schroeder, 1036 Eighth street., Ft. Madison, Iowa. The birth occurred at the Sacred Heart Hospital.

I was in consultation and delivered both babies (forceps) and administered the adruilin injection.

D. L. Newton.

COMING MEETINGS

The annual meeting of the Dubuque County Medical Society will be held at Dubuque September 19 and 20. Following is the program at the time of writing (August 24).

Evarts A. Graham, St. Louis, Missouri—"The Pathogenesis of Cholecystitis and the Complications with Reference to the Surgical Treatment."

Walter M. Boothby, Rochester, Minnesota—"Total Metabolism in Exophthalmic Goitre."

John M. Dodson, Chicago, Illinois—"Medical Education of the Public—Its Purpose and Methods."

Joseph C. Bloodgood, Baltimore, Maryland—1. "Tumors of the Female Breast." 2. "Tumors of the Jaw."

Vincent J. O'Connor, Chicago, Illinois—"The Treatment of Cancer of the Urinary Bladder by Means of Thermo-Electro Coagulation."

J. H. Mitchell, Chicago, Illinois—"Diagnosis of Common Skin Diseases." (Lantern slide demonstration.)

Millard F. Arbuckle, St. Louis, Missouri—"Suppurative Disease of the Nasal Accessory Sinuses as an Etiological Factor in Constitutional Diseases in Children."

W. C. Danforth, Evanston, Illinois—"The Present Position of Operative Obstetrics."

I. A. Abt, Chicago, Illinois—"Recent Views Concerning the Pathogenesis and Treatment of Nutritional Disease, (gastrointestinal) of Infancy."

Albert H. Byfield, State University of Iowa—"Certain Underlying Principles in the Feeding and Nutrition of Infants and Children."

Other papers will be read by Drs. Fred L. Adair, Minneapolis; Arthur Steindler, Iowa State University; John E. Summers of Omaha; John S. Evans, State University of Wisconsin; Herman L. Kretschmer, Chicago. Dr. F. H. Falls of the State University will give a paper on obstetrics illustrated with moving pictures.

A public meeting will be held in the auditorium of the new high school of Dubuque on the evening of the 19th. Dr. J. C. Bloodgood will address the meeting on a subject concerning Preventive Medicine in general and the Prevention of Cancer in particular. He will also give a special talk to dentists on Tumors of the Jaw.

The Dubuque County Medical Society extends an invitation to all the physicians and dentists of the state to attend their meeting which promises to be one of the most important in the Middle West this year.

SOCIETY PROCEEDINGS

Clinton County Medical Society

Resolution adopted by the Clinton County Medical Society at a special meeting held August 2, 1923.

Whereas: There is a proposition under way to hold a series of clinics throughout Clinton county, in infant and maternal welfare, under the Shepard-Towner act and under the direction of the County Red Cross Nurse, and,

Whereas: It is the opinion of the medical profession through the various states that the Shepard-Towner act is an imported socialistic scheme unsuited to our form of government, and,

Whereas: The act as at present written places the supervision entirely in the hands of non-medical personnel at Washington.

Therefore be it Resolved: That the Clinton County Medical Society go on record as urging the correction of the undesirable features of the law, and,

Be it further Resolved: That in as much as the law has been passed by the federal government and concurred in by the state government that the members of the Clinton County Medical Society lend their cooperation to these proposed clinics in the hope of making them a success and with the idea of guiding the work into the safest possible channels, and,

Be it Further Resolved: That a copy of this resolution be sent to the personnel in charge of these clinics.

H. R. Sugg, Sec'y.

Davis County Medical Society

The Davis County Medical Society enjoyed a picnic at the Bloomfield Country Club, Wednesday, July 25, with members of the Van Buren, Wapello and Appanoose County Medical Societies and their families as guests. A large number were in attendance. The scientific program presented included a

paper on Aciodynia, by Dr. Zenella Morris, Stockport; The Differential Blood Count and its Significance, Dr. F. A. Hecker, Ottumwa; Endocrines, Dr. Ralph Selman, Blakesburg. A band concert by the Legion band completed the program.

Fayette County Medical Society

The annual meeting of the Fayette County Medical Society was held at Donnan, Friday afternoon, June 1, 1923, for the purpose of electing officers for the ensuing year, resulted in the following being elected: Dr. J. M. Smittle of Waucoma, president; Dr. Wood of Wadena, vice-president, and Dr. Hall of Maynard, secretary-treasurer.

Mitchell County Medical Society

The annual meeting of the Mitchell County Medical Society was held with Dr. G. E. Kreplka and Dr. J. C. Smith, Stacyville, June 27, at which time Dr. J. C. Westenberger, St. Ansgar, was elected president; Dr. Frank Lee, Riceville, vice-president; Dr. G. A. Lott, Osage, secretary, and Dr. R. L. Whitley, Osage, delegate.

Dr. G. A. Lott, Sec'y.

Van Buren County Medical Society

The Van Buren County Medical Society held its fifth annual picnic at Anderson Park on Tuesday, July 17. About ninety were present and the program was as follows:

The Pregnant Woman—Antenatal Care, Dr. J. S. Gaumer, Fairfield.

Hospitals and Public Health—Dr. F. A. Hecker, Ottumwa.

Modern Treatment of Diabetes, Dr. J. D. Boyd, Iowa City.

Pre-nasal Sinusitis, Causes and Treatment, Dr. C. B. Taylor, Ottumwa.

A Few Therapeutic Hints, Dr. R. N. Cresap, Bonaparte.

Physicians were present from Iowa City, Fairfield, Ft. Madison, Keokuk, Ottumwa, Bloomfield and various towns of Van Buren county.

As a tribute to an old colleague, Dr. G. R. Neff, those present stood for a moment with bowed heads. Dr. Neff is greatly missed by the physicians of the county. He was a faithful member, attending almost every meeting and ready at all times to do his part.

The picnic was an entire success. Dr. T. G. McClure of Douds is president of the Society, and Dr. C. R. Russell of Keosauqua is secretary.

C. R. Russell, Sec'y.

Des Moines Valley Medical Society

Dr. Eppie McCrea of Eddyville was elected president of the Des Moines Valley Medical Society at its fiftieth meeting, June 21. Dr. A. P. Johnson of Sigourney, first vice-president; H. C. Young of Bloomfield, second vice-president; W. E. Anthony of Ottumwa, re-elected secretary-treasurer; W. W. Han-

sell of Grinnell, assistant. The board of censors, Drs. D. T. Rambo of Ottumwa; H. C. Eshbach of Albia; S. K. Davis of Libertyville.

Austin Flint-Cedar Valley Medical Society

The Austin Flint-Cedar Valley Medical Society meeting was called to order by the president, Dr. E. L. Rohlf at 1:30 p. m. on July 10 at Waterloo. The scientific program was opened by a surgical clinic conducted by Dr. A. J. Brown of Omaha. A very interesting group of cases had been worked up by the Waterloo physicians and Dr. Brown's discussion of these cases from a surgical standpoint was extremely beneficial to all in attendance. The remainder of the program was as follows:

Treatment of Hernia in Infants and Children, Dr. L. C. Kern, Waverly.

Inguinal Hernia (illustrated), Dr. George Earl, St. Paul, Minnesota.

Carcinoma of the Cervix Associated with Pregnancy, Dr. Nicholas Schilling, New Hampton.

On Wednesday morning, July 11 at 8 a. m. Dr. R. W. Bliss of Omaha conducted a medical clinic. His presentation of the cases and method of physical diagnosis were very much appreciated by the members of the society. Following this, in the absence of Dr. W. D. Runyon of Sioux City, Dr. J. C. Shellito of Independence read Dr. Runyon's paper on Treatment of Chronic Chest Conditions. The president's address was then given by Dr. E. L. Rohlf of Waterloo. It proved to be a masterly treatise on the program of medical science.

The annual business meeting of the society was then held. The minutes of the last meeting were read and approved. The following applications for new membership, which were received at the Mason City meeting in November, 1922, and which had been approved by the board of censors, were read by the secretary and elected to membership: Dr. N. C. Stam, Mason City; Dr. R. N. Brisbine, Mason City. The applications of Dr. Charles Ross of Charles City and Dr. A. A. Schmidt of Postville, were not approved by the board of censors. The following new applications for membership were received at the meeting: Dr. J. C. Shellito, Independence; Dr. J. H. Butts, Waterloo; Dr. J. G. McAlvin, Waterloo; Dr. W. H. Acker, Waterloo.

The question of the society holding only one meeting a year instead of two as is the present custom was discussed by Drs. Kenefick, Schilling and W. A. Rohlf, all of whom were against any change in the number of meetings to be held. Dr. Rohlf then invited the society to meet in Waverly next November. It was moved by Dr. Evans and seconded by Dr. Long that we accept Dr. Rohlf's invitation and this was unanimously carried. The following officers were elected for the coming year: Dr. J. G. Evans, New Hartford, president; Dr. C. F. Starr, Mason City, vice-president; Dr. W. E. Long, Mason City, treasurer; Dr. L. A. West, Waverly, secretary.

The afternoon program of Wednesday, July 11, began at 1 p. m. and was as follows:

Stone in the Ureter—with case report, Dr. T. F. Thornton, Waterloo.

Some Observations on the Pre-operative Treatment of the Hypertrophied Prostate, Dr. N. G. Alcock, Iowa City.

Treatment of Gonococcus Infection, Dr. W. H. Von Lackum, Rochester, Minnesota.

Prophylaxis in Pregnancy, Dr. E. E. Magee, Waterloo.

Reflex Migraine, Dr. C. W. Ellyson, Waterloo.

Medicine and Surgery in South America—illustrated, Dr. W. A. Rohlf, Waverly.

All of these papers were freely discussed and many beneficial points were brought out by the essayists. Dr. McAlvin and Dr. Curry of Waterloo are to be congratulated on the amount of surgical and medical clinic material that was presented at the clinics.

On Tuesday evening, July 10, a very enjoyable banquet was served at the Sunnyside Country Club and following this a real old time, far famed, Austin Flint dance completed the evening's entertainment. Mrs. E. L. Rohlf of Waterloo deserves a vote of thanks for the delightful entertainment provided for the ladies during the meeting. All in all it was a most successful scientific and social meeting and regardless of the thermometer registering about 100 in the shade the doctors who attended were more than well repaid for the interest they showed by attending the meeting.

L. A. West, M.D., Sec'y.

Upper Des Moines Medical Society

The Upper Des Moines Medical Society held its mid-summer meeting at the West Okoboji Golf and Country Club, Milford, July 20. Among the speakers were Drs. L. R. Woodard and Geo. M. Crabb of Mason City, and Dr. John R. Peck of Des Moines. The latter doctor had charge of the clinic which was conducted by the physicians of the county. Miss Blanche Eddy, Dickinson county Red Cross nurse, was in charge of the patients.

HOSPITAL NEWS NOTES

Contractors broke ground July 12 for the foundation of the addition to Sacred Heart Hospital, Ft. Madison, which will add sixty-eight rooms and several wards to the present building and will enlarge not only the capacity but also the professional field of the local institution.

Improvements that will increase the capacity of the Mercy Hospital, No. 222-224 North Market street, Oskaloosa, to a fifty bed institution were begun by Dr. B. G. Williams. A third story is to be built over the fireproof addition erected a short time ago, modern elevator service installed, etc.

The new third floor will house the hospital operating room, now located on the second floor of the

original building, and will provide rooms for fifteen new beds, with increased accommodations for the handling of the growing business of the institution.

The board of regents of the Virginia Gay Memorial Hospital, Vinton, July 5, announced to the general public that the hospital is ready to receive a few medical and obstetrical cases. No surgical cases can be taken for some time. At the present time the hospital can accommodate four or five patients. Announcement will be made later through the papers when other departments are ready to receive patients.

PERSONAL MENTION

Dr. Sara Elizabeth Foulks, formerly of Davenport, Iowa, now in charge of one of the American women's hospitals in Athens, Greece, has been appointed field director of American women's hospitals in Greece and the islands of the Aegean, to succeed Dr. Mabel Elliott, Benton Harbor, Michigan, it was announced July 25.

Dr. John W. Shuman, who left Sioux City a year ago to accept the chair of internal medicine at the American University at Beirut, Syria, has submitted his resignation to the board of trustees and anticipates returning to the United States within a few months.

Dr. R. H. Lott of Maquoketa has moved to Carroll, to become surgeon to the Carroll Clinic.

Dr. F. E. Powers of Dyersville will move to Cascade and succeed the late Dr. May.

Dr. Hugh Jenkins of Preston, has sold his office and practice to Dr. Armstrong. Dr. Jenkins has practiced in Preston forty years.

Dr. and Mrs. M. L. Turner of 5505 Grand avenue, Des Moines, have returned from a month's tour of the Pacific coast. Dr. Turner read a paper on the care of children before the American Medical Society which met in San Francisco.

In celebration of the seventieth birthday anniversary of Dr. George Royal, who has been a practicing physician in Des Moines for forty years, a surprise dinner was given Sunday by Mr. and Mrs. Nelson Royal at their home, 1803 Oakland avenue.

Dr. J. McDannell entertained a circle of physicians, who meet annually at his camp south of Nashua, Friday evening, July 13. The guests indulged in swimming prior to the elaborate supper served at 7 p. m., the later hours being spent with cards and smoking. Those present were: Dr. O'Keefe, Marble Rock; Dr. Call, Greene; Dr. Yennerick, Rockford; Drs. Rohlf and West, Waverly; Drs. Wick, Taylor and Stuart, Nashua, and E. P. Foster, of this city.

Dr. Edward Meggers, who has been operating surgeon at the Prairie du Chien sanitarium for the past year has purchased the practice of Dr. W. A. Miller of Elkader and after August 1, will be associated with Dr. P. R. V. Hommel under the firm name of

Hommel & Meggers, Dr. Miller's retirement being due to his continued ill health.

A second donation of rare and useful laboratory equipment was made by Dr. Oliver Fisher to the city laboratory, the value of the donations being more than \$2,000. Dr. Fisher, who practiced medicine at Onawa, Iowa, for several years, returned to Sioux City this summer, to live. Included in Dr. Fisher's donation, are a spectroscope, spectrometer, Hoskins electric furnace, Aberhalden set, oxygen generator and many other useful and expensive articles. The city laboratory here now is undoubtedly the best equipped in Iowa, outside of those at the state university and the state agricultural college, according to W. D. Hayes, city health commissioner. This condition is very largely due to donations by Dr. Fisher and others.

Dr. W. T. Webb, who has been located for four years in Audubon, has come to Fairfield to establish a practice and has leased the offices formerly occupied by Dr. A. S. Hague.

Dr. F. W. Larson of Minneapolis, who has formed a partnership with Dr. L. G. Hewitt, has arrived in Northwood and Drs. Hewitt & Larson will soon be located in the new quarters in the offices of the late Dr. E. H. Dwelle, on Eighth street.

Dr. A. G. Asher of Chicago is now associated with the Fort Dodge clinic on the eighth floor of the Carver building, arriving in Fort Dodge this week. His position will be that of internist and diagnostician. Dr. Asher is a graduate of the University of Chicago and of Rush Medical College. He spent eighteen months in the Presbyterian Hospital in Chicago on the medical staff of Drs. Herrick and Irons and later eighteen months in the Cook county hospital. He was accompanied by Mrs. Asher, who before her marriage of a recent date was Miss Gladys Nelson of Northfield, Minnesota. Mrs. Asher is a graduate nurse of the Presbyterian Hospital of Chicago.

OBITUARY

Dr. Burton Argyle Baird, formerly of S. U. I., later of Rochester, Minnesota, died July 9, in that city, aged thirty-one years and nine months.

He was a former resident of Prairie City, Iowa.

In 1915 he received both his B.S. and his M.D. During the last five years or so he has been connected with the Mayo brothers, first as an interne and then in higher posts, as he earned promotion.

Dr. George W. May died suddenly at his home in Cascade on Monday evening, July 9. Several weeks ago he developed symptoms of gall-stones and went to a hospital for treatment, returning home a few days ago apparently much improved. His sudden death came as a great shock to his family and acquaintances.

Dr. May was born at Cascade forty-six years ago and leaves a widow and six children.

Dr. John G. Bickley, seventy, a resident of Waterloo for the past sixty-two years, died at the home of his son, Dr. Carl C. Bickley, 1325 Fourth street, West Waterloo, at 11:45 a. m., July 5, 1923. Death was caused by acute dilatation of the heart.

Dr. Bickley was born December 10, 1853, in Somerset county, Pennsylvania. He came to Waterloo with his parents, Dr. and Mrs. John A. Bickley, in 1861, and had been a resident of this city since that time. He attended public schools here, and following his graduation was employed at the G. W. Harbin and Dr. Griffin drug stores. Later he entered Jefferson Medical College, Philadelphia, and upon graduating returned to Waterloo to join in practice with a brother, Dr. G. G. Bickley, who died ten years ago.

His wife, who was Evaline Pitcher before the marriage in September, 1881, preceded him in death twenty-three years ago.

Deceased is survived by four sons, Dr. Carl C. and Dr. Cecil, Waterloo; and Dr. Robert and Dr. Emil, New York. He is also survived by two sisters, Mrs. Susan Goughnour and Mrs. Lydia B. Holmes, Waterloo, and a brother, Jacob, Clarksville.

Dr. Bickley was a well known figure in the medical world. He had not been well for some time and spent his winters in Florida or California. Last winter he and his son, Dr. Carl Bickley, spent three months in Europe, visiting England, Scotland and points on the continent. They returned to New York in March of this year, where the elderly physician contracted a severe pneumonia, from which it was feared he would not recover.

However, he did recover a few weeks later, and immediately returned to Waterloo.

Dr. William Chambers Schultze, who came to Marengo in 1868 and practiced medicine for forty years, died at his home in Gresham, Oregon, Thursday, June 28. Dr. Schultze was one of the best known physicians in the country in an early year. He graduated from LaFayette College, Pennsylvania, in 1865 and from the medical college in 1867, coming to Marengo the following year.

DeLoss Hurbut was born in Venice, Cayuga county, New York, August 17, 1855, died June 30, 1923, aged sixty-seven years, ten months and thirteen days.

His early education was obtained at Genoa, New York, later attending Cornell University, Ithaca, New York, after which he took a four years' medical course at Bellevue Hospital, New York City from which he was graduated March, 1879.

He entered immediately upon his profession locating at Iowa City, where he remained a short time only. From here he went to Ionia, Chickasaw county, Iowa, where he practiced medicine for thirty-three years.

April 2, 1884 he was united in marriage to Miss Lorena Bishop, who died of peritonitis the following October.

November 24, 1866 the Doctor and Miss Elizabeth

Spencer of LeRoy, Minnesota, were united in marriage and to this union were born five children.

Leaving Ionia in 1912, the family moved to Rudd, Iowa, and later to Paton, Iowa, finally locating in LeHigh in 1917, where he continued his profession until the final summons home.

Dr. Waterhouse was born at Dubuque, Ia., January 9, 1870, and died at Mapleton, June 20, 1923. He located at Charter Oak in 1895 and practiced the profession of medicine here until 1913, when he moved to Mapleton. He has been there ever since.

He was united in marriage with Miss Emma Dickinson on the 2nd of July, 1895. To them one daughter survives, Miss Lucile, well remembered by Charter Oak people.

Dr. Waterhouse for several years operated the Mapleton Hospital. It was while conducting this institution that he suffered a severe attack of blood poisoning following an operation. When his health would no longer permit, he sold his interests in the hospital.

A year ago he suffered a stroke of paralysis which weakened his vitality and later caused death.

BOOK REVIEWS

LEGAL MEDICINE AND TOXICOLOGY

By many specialists, edited by Frederick Peterson, Manager Craig Colony for Epileptics; Walter S. Haines, M.D., Late Professor of Chemistry, Materia Medica and Toxicology, Rush Medical College and Ralph W. Webster, M.D., Assistant Professor of Medical Jurisprudence, Rush Medical College. Second Edition, Two Octavo Volumes, Totaling 2268 Pages, with 334 Illustrations, Including 10 Inserts in Colors. W. B. Saunders Company, 1923, Cloth \$20.00, Net.

It is difficult to estimate the full value of this great work on Medical Jurisprudence. The more complicated society becomes, the closer the relation of individuals and the greater the responsibilities of those who have the direction of public affairs. The right of the individual must be respected and the duty of the individual to the public made clear. The duty of the public to the individual in securing to him fair and just treatment in an alleged wrong doing, brings a responsibility that can only be met when modern science is employed in the investigation.

The relation of law and medicine come in close contact and only men of the highest character and the most thorough training are fitted to fill the office of investigators when the interests of society are involved. In examining the list of contributors to these volumes, these conditions will be found to be fully met.

The introduction is written by Drs. Peterson, Haines and Webster. The "Legal Rights and Obligations of Physicians" is prepared by Dr. Harold

Moyer. This chapter should be carefully read by practicing physicians, because it is of every-day importance to him, for it is upon a knowledge of his obligation to his patient that he may escape troublesome malpractice suits and judgments, particularly judgments. Observing all the legal obligations may not save him from suit, but the courts will save him if he is within the law.

Dr. James Ewing contributes several subjects. "Railway Injuries and Disorders of Nervous System," following: "Railway Accidents" appear in Volume One, by Dr. John C. Da Costa, Dr. John F. X. Jones, Dr. Pearce Bartey and Dr. Foster Kennedy. These chapters will be particularly interesting to railway surgeons, not only to railway surgeons, but to claim agents and Employers' Liability Commissioners.

It is impossible to consider all the questions presented, there are some subjects which should be referred to. "Mental Disorders in Medicolegal Relations" written by Professor Albert M. Barrett of the University of Michigan. Dr. Barrett considers a number of subjects under this head, with a knowledge and skill equaled by few men. The problems are different, but exceedingly important and enter largely into legal medicine.

The "Mental Defect" group by Drs. Petersen and Jelliffe and "Mental Perversions of Sexual Instinct" by Dr. Chas. G. Chaddock are closely allied and enter many legal prosecutions. A section of this volume is devoted to a summary of "State Laws Relating to the Insane" by John Kornen.

A chapter of great importance to the physician and attorney under the title: "The Legal Aspects of Pregnancy," by Dr. W. A. Newman Dorland, including "Legitimacy, the Determination of Sex, Signs of Delivery," by Dr. Dorland, and "Birth and Legitimacy," by Dr. A. L. Goldwater. The chapter on "Abortion and Infanticide" is prepared by Dr. Edward P. Davis. "Impotence and Sterility" by Dr. Charles G. Chaddock.

There is a chapter on the "Medical Jurisprudence of Life Insurance" by Dr. Samuel T. Armstrong.

The second volume is devoted largely to the "Medical Jurisprudence of Poisons," including the Technic of Medicolegal Postmortem Examinations; Relating to Inorganic Poisons, Gaseous, Alkaloidal, Non-Alkaloidal Poisons, Food Poisoning, Poisonous Mushrooms, Poisonous Proteins and Industrial Toxicology.

An important contribution by Dr. Victor C. Vaughn appears under the head, "The Postmortem Imbibition of Poisons" and "The Destruction and Attempted Destruction of the Human Body by Fire and Chemicals," by Dr. Walter S. Haines.

A first edition of this important work appeared several years ago, but on account of important advancements made in medicolegal science since that time, and the fact that several contributors to the first edition have died, the work has been for the most part rewritten, and we now have before us a new work under the old title. We cannot say too

much in commendation of this great work, treating as it does of many vital facts which confront us in our complex civilization. This work will of necessity find its way into the libraries of our more progressive physicians, attorneys and those who have to do with the operation of our workmen's compensation laws.

INTERNAL MEDICINE

A Work for the Practicing Physician on Diagnosis and Treatment, with a Complete Desk Index, in Three Volumes. Illustrated with 427 Text Illustrations and 14 in Colors. Medical Diagnosis, Sixth Edition, Revised and Enlarged in Two Volumes. Volume I. Medical Diagnosis in General, The Methods and Their Immediate Results; Symptoms and Signs, Tests. Volume II. The Clinical Application of Diagnostic Methods; The Natural History of Disease; Direct and Differential Diagnosis; Prognosis. Volume III. Treatment, By James C. Wilson, Emeritus Professor of the Practice of Medicine and Clinical Medicine in the Jefferson College, etc. Assisted by Creighton H. Turner, M.D. J. B. Lippincott Company, 1923. Price \$20.00.

This sixth edition of Professor Wilson's work on Medical Diagnosis appears in two volumes, and to make the work complete, a third volume has been added on treatment, with the assistance of Dr. Samuel Bradbury of New York. The added material has made the two volumes necessary, which added material includes Acute Poisoning by Wood Alcohol; Vitamines; Metabolism and Basal Metabolism; Endocrinology and Lethargic Encephalitis.

The value of the work prepared by Professor Wilson on Medical Diagnosis impressed his friends, and the friends of scientific medicine, with the feeling that it would be highly desirable if a supplementary volume on "Treatment" was prepared.

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We have therefore a complete and valuable work on Internal Medicine. The Desk Index adds very materially to the convenience of reference.

NEW AND NON-OFFICIAL REMEDIES, 1923

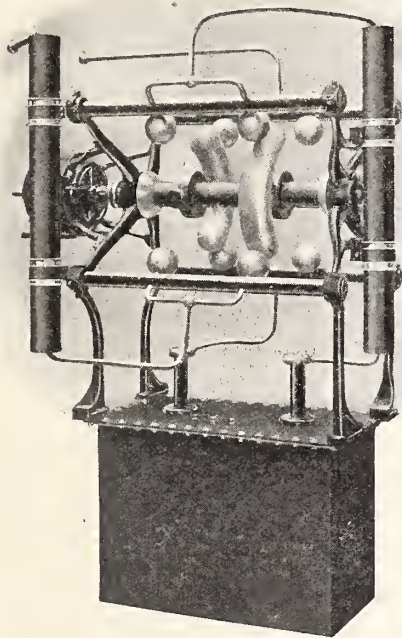
Containing Descriptions of the Articles Which Stand Accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1923. Cloth. Price, Postpaid, \$1.50. Pp. 415+-

(Continued on advertising page xix)

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DES MOINES, IOWA

BOOK REVIEWS

(Continued from page 402)

XXXVI. Chicago: American Medical Association, 1923.

The progressive, up-to-date physician cannot dispense with the newer remedies, proprietary and non-proprietary. Yet he can neither select them on the basis of the manufacturers' claims alone, nor devote his patients to experiments while he tries out those claims.

New and Non-official Remedies is the publication of the Council on Pharmacy and Chemistry through which this body annually presents the American medical profession with disinterested, critical information about the proprietary medicines which are offered to the profession, and which the Council deems worthy of recognition. In addition to the descriptions of proprietary preparations, the book contains descriptions of those non-official remedies which the Council deems deserving of consideration by the profession.

A valuable feature of the book is the grouping of preparations in classes. Each of these is introduced by a general discussion of the group. Thus the silver preparations, the iodine preparations, the arsenic preparations, the animal organ preparations, the bi-

ologic products, etc., each is preceded by a general, thoroughly up-to-date discussion of the particular group. These general articles compare the value of the products included in the group with similar pharmacopeial and other established drugs which it is proposed that these proprietary preparations shall supplant.

A glance at the preface of this volume shows that the book has been extensively revised. In fact each edition of New and Non-Official Remedies is essentially a newly written book, brought up-to-date by those who speak with authority on the various phases of therapeutics.

Physicians who wish to know why a given proprietary is not described in New and Non-Official Remedies will find the References to Proprietary and Unofficial Articles not found in N. N. R. of much value. In this chapter (in the back of the book) are given references to published articles dealing with preparations which have not been accepted.

New and Non-Official Remedies should be in the hands of all physicians who prescribe drugs. The book contains information about the newer materia medica which cannot be found in any other publication.

The book will be sent post-paid by the American Medical Association, 535 North Dearborn street, Chicago, on receipt of one dollar and fifty cents.

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A. L. YOCOM, JR., M. D.
Roentgenologist
CHARITON, IOWA

PROPAGANDA FOR REFORM

Incompatibility of Mercurochrome—220 soluble with local anesthetics and alkaloids—An accident from the precipitation of mercurochrome—220 soluble by procain has been reported. The A. M. A. Chemical Laboratory has confirmed the incompatibility. The following local anesthetics were found to give precipitates when treated with mercurochrome—220 soluble solution: alypin, apothecin, benzocain, butyn, cocain hydrochlorid, B-eucain lactate, phenacain, procain, propaesin, quinin and urea hydrochlorid, tropacocain hydrochlorid and stovain. Many vegetable alkaloids were also found to be incompatible with mercurochrome—220 soluble. (Jour. A. M. A., April 14, 1923, p. 1091.)

Alcohol and Disease—Recently a statistical report regarding the possible influence of alcohol on the prognosis of pneumonia in a large municipal hospital has been published. The data for nearly 3,500 cases of lobar pneumonia showed that, with reference to the patient's habits of indulgence in alcoholic drinks, that the mortality was higher in moderate users than in light users or abstainers, and that the mortality is much higher in excessive users than in moderate users. It must be borne in mind, however, that these statistics have no bearing on the use of alcohol in therapy. (Jour. A. M. A., April 7, 1923, p. 1007.)

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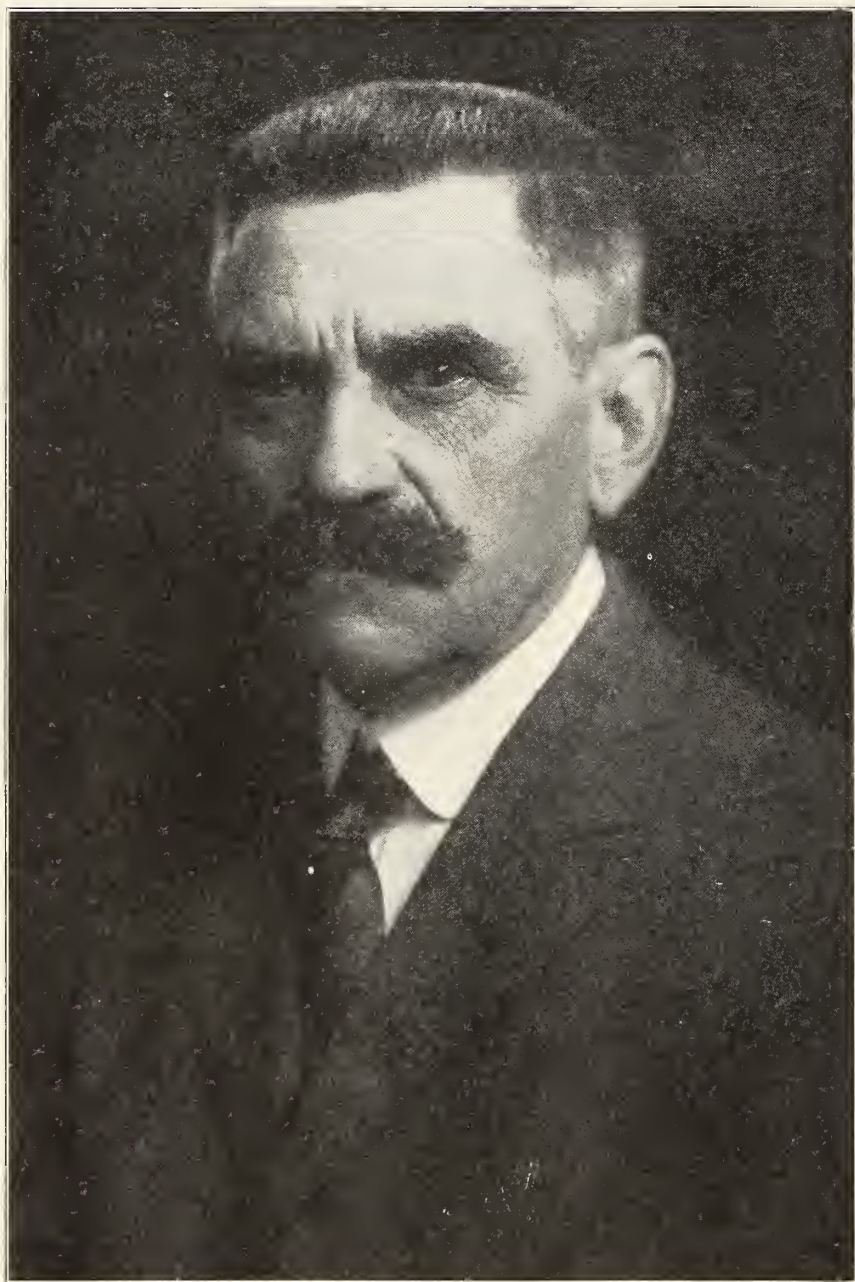
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Milwaukee, Wisconsin
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1923

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SOME PRACTICAL CONSIDERATIONS OF THE PHYSIOLOGY OF THE UPPER RESPIRATORY TRACT*

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Mayo Clinic

In daily practice, many patients are encountered who complain of symptoms of the upper respiratory tract, which, on final analysis, are not pathologic, but may be explained as normal physiologic activities of the structures in their response to changes in environment.

The details of the function of these structures are not thoroughly familiar to many practitioners, and apparently little is known and much less understood by the laity. This is largely due to the fact that, in medical curriculums of the past and present, very little mention is made, and little attention paid, to the part that the upper respiratory tract plays in respiration, and the effect on the general well-being of the individual. Careful study has been made by research workers on the physiology of the special senses, olfaction, taste, and so forth, and, in turn, this knowledge has been passed on to patients by their physicians; but my experience in dealing with patients from the standpoint of the nose and throat, particularly, has led me to believe that they do not understand how the nose and throat would be expected to function under certain environmental conditions, and therefore complain of symptoms which, in reality, are of no more consequence than other physiologic bodily reactions, such as sweating, or chilling, with the resulting so-called goose flesh. Usually, when the symptoms are explained on this basis, the patients are relieved and satisfied.

Rhinology has made great progress in the past quarter century and, fortunately for patients, is now practiced on a more conservative and scientific basis. Formerly it was largely practiced on a purely anatomic basis, and, in consequence, many patients underwent very destructive intra-

nasal operations to relieve all manner of symptoms. This practice led, as Stein says, to adding many new symptoms to the old. In the future, we may look to the application of more physiologic facts and, as experience grows, the art and science of rhinology will assume a more important part in the daily management of cases, as one learns to see the patient as a whole, rather than through the "hole" of a nose speculum.

ANATOMIC FUNDAMENTALS

Certain individuals could be easily identified by the particular conformation of their external noses. In fact, the nose has been used for this purpose. A well-functioning nose, however, is not necessarily a "thing of beauty," but it is "a joy forever." It would be very difficult to describe an external nose in words, and rather difficult to describe its position on the face.

All noses in man have one common characteristic: the openings are more nearly on the horizontal than the vertical plane when one lives an "upright life." There seems to be a natural reason for this, the directing of the air currents into the intranasal structures, or real functioning region. To be sure, a person may live his allotted life, breathing through the mouth, but he will not live so comfortably under all environments. Patients are also known to have lived twenty years breathing through a tracheotomy tube.

The indications of the nasal fossa in the embryo appear as pits, situated on either side of the anterior portion of the head, and are first seen at about the twenty-first day, that is, at about the same time as the eyeball and ear vesicles appear. As development takes place, these nasal pits fuse. Intranasally, the nose is divided by the septum, which is scarcely ever perfectly straight, into nearly equal cavities, opening anteriorly through the vestibule and posteriorly into the pharynx through the choana. From the lateral wall project the three turbinate bones, thereby enlarging the available surface exposure, and helping to direct the air currents within the nose. Beneath each turbinate is situated the so-called meatus, of which the middle meatus is the most important,

*Presented before the Seventy-Second Annual Session, Iowa State Medical Society, Ottumwa, Iowa, May 9, 10, 11, 1923.

because in it, protected by the middle turbinate, is situated the hiatus semilunaris, with the openings to the nasal accessory sinuses. The inferior turbinate is normally the largest, and tapers towards each end. Under it is the opening for the lacrimal duct. The cavity narrows as it approaches its upper extent. That portion of the nose below the level of the superior border of the middle turbinate may be said to be respiratory, and that above, olfactory. From the choana the air enters the pharynx.

The pharynx belongs to the digestive tube embryologically, and is seen first at about the third week of embryonal life. In the beginning, the pharyngeal end of the foregut is a tube with a blind end, and lies between the oral opening of the amnion and the heart cavities in front, and the chorda dorsalis and cerebral vesicles behind. These structures, developed from the ectoderm, are thus seen to be separated from one another by the intrusion of the digestive-tube, formed from, and lined by the cells of the entoderm. The line where the two kinds of cell derivatives meet in extra-uterine life is at the anterior pillars and the edge of the soft palate. Anatomically, the pharynx as a whole, which is the upper extension of the gastrointestinal tract, extends from the base of the skull to the level of the cricoid cartilage, as a cavity which communicates anteriorly with the nose, and above its middle portion with the mouth, and in its lower portion with the larynx and the upper end of the esophagus. Above the soft palate on each lateral side, is the pharyngeal end of the eustachian tube. In the uppermost part and on the posterior wall, are the openings for the sphenoidal sinuses. Below the opening for the sphenoidal sinus is the pharyngeal tonsil or adenoid, and laterally, below the eustachian tube and behind the posterior pillar, is the lateral pharyngeal band of adenoid tissue. The size of the pharynx varies.

Histologically, the upper respiratory tract may be said to be lined by the same type of membrane and substructures, except that in certain locations, certain characteristics predominate. For instance, the mucosa is relatively thicker over the turbinates than it is in any of the other portions of the tract, and in the ethmoid cells it is relatively very thin. The mucous membrane lining is very vascular, and inseparably united with the periosteum and perichondrium over which it lies. In the olfactory region, the epithelium is non-ciliated and columnar, and does not possess the glandular elements seen elsewhere. In the respiratory portion, the membrane is covered with columnar ciliated cells. The blood supply comes

largely from the sphenopalatine artery with anastomosis with the ethmoidal, external nasal, septal and palatine arteries and those of the lower part of the nasolacrimal duct. This network of vessels occupies the deepest regions of the mucosa and the periosteum. The veins empty into the facial veins largely, but from the ethmoidal region they communicate with the venous plexus through the cribriform. The veins arising around the lacrimal sac and duct empty into the orbital veins, and those of the face around the orbit. The lymphatics are subepithelial and large.

The innervation of the nose, aside from the olfactory, comes from the sphenopalatine ganglion, the nasal nerve and the internal branch of the ethmoid nerve.

The respiratory membrane is supplied with cavernous blood spaces of erectile tissue. The arterioles are supplied with a muscular layer and, from their deep situation, take a corkscrew course toward the surface and the venous sinuses, the latter of which may be of considerable size and so much enlarged in the mucosa, when it is the site of inflammatory change, that it is often difficult to judge what is abnormal. Its development has a close relation with the beginning of sexual life, since it is only seen in its full extent after adolescence is established, and it begins to atrophy after middle life. This fact is of definite clinical importance in our every day practice.

The capillaries are distributed everywhere through the connective tissue of the mucosa. Tiny capillary twigs are in contact with the basal layer of the gland epithelium, and Wright says that it is possible to see direct diapedesis of the white cells through the capillary walls, and between the gland cells into the lumina of the acini. There is every reason to believe that in this way the blood-vessels may empty the serous and leukocytic elements of the blood directly into the glands. Vasomotor dilatation, therefore, means not only an exudation of the serum of the blood-vessels into the stroma, and a consequent swelling of it, but simultaneously a direct discharge into the glands and onto the surface of the mucosa. Around the gland ducts, whose mouths usually lie in some sulcus of the surface epithelium, there is at these openings a more or less thick network of capillaries. It is seen, then, that a vasomotor dilatation of these capillaries would mean a considerable constriction of the gland outlets. As the vasomotor excitement subsides, this constriction is released and a free discharge of the seromucous gland contents is afforded.

The contractile elements of the stroma are composed of elastic tissue and smooth muscle fibers.

It will be recalled that we drew attention to the development of the erectile tissue and sex development, and here it becomes clinically important that this be recognized, as it accounts for much of the so-called coryza so often seen in adolescence. The innervation of these substructures comes from the sympathetic nerve through the sphenopalatine ganglion and, as our knowledge of the sympathetic nervous system and its substructures increases, we shall be able to deal more intelligently with the various syndromes, due to derangement of the vasomotor control. The elastic elements are important because of the effect that repeated inflammatory reactions may have on them. Thick interlacing bundles, running parallel with the planes of the bone, are demonstrable. In the same manner the smooth muscle cells of the blood-vessels are important because of the effect that repeated inflammatory reactions, resulting in enlargements, may have on the caliber and function of the blood-vessels.

Epithelium—Whether the surface layers are of the columnar or the pavement variety, the basal layers, except as noted for the olfactory region, are cuboidal in shape, resembling closely the fixed connective-tissue cells with which they mingle, as there is no limiting membrane between them. It is often difficult to determine where the epithelium leaves off and the stroma begins.

Glands—The Bowman type of glands prevails in the olfactory region. They secrete a much less viscid fluid than the racemose glands in the respiratory membrane. While it may be true that these cells secrete a peculiar fluid aiding in the function of olfaction, its watery character is especially adapted to extend over the olfactory surface, and to cause it to drip down as sterile irrigation for the respiratory region below. It is not bactericidal in action.

The racemose glands of the respiratory region differ in no way from the structure of racemose glands elsewhere in the body. Not infrequently the acini are imbedded in the tissue, but, as a rule, they lie more superficially than the cavernous sinuses, varying greatly in their distribution. In the accessory sinuses there are very few. It is said that the secretion from the respiratory part of the membrane is in itself quite bactericidal.

PHYSIOLOGY OF THE NOSE

The function of the nose has been said to be fourfold, to warm, moisten, and filter the inspired air, and to smell. The efficiency of each of these processes depends, largely, on the function of the vasomotor control. Tatum has recently shown experimentally that nasal respiration is an

adaptive reflex mechanism, lessening resistance when respiratory need is increased, and vice versa. The dilatation of the vessels, when it is not carried to the point of rendering the amount of air supply to the lungs insufficient, renders the air, when it reaches the pharynx, not only warmer and more moist and freer of dust and bacteria, but by filling the unnecessary space in the respiratory region of the nose, it directs a more copious supply of it toward the olfactory region. Wright says, "The internal configuration of every nose, even of those we would pronounce normal, varies so greatly that every nasal chamber is a law to itself. Anterior and posterior rhinoscopy are often incapable of furnishing us with trustworthy information as to the efficiency of the nasal chambers in the performance of these functions. The statements of patients are still more untrustworthy. Some fail to appreciate even extreme grades of nasal obstruction. Others complain of it when manifestly it does not exist. The clinical experience, the common sense of the physician, and his ability to judge the patient's temperament are more important guides to the appreciation of how these functions are in reality being performed, than the help his technical skill or the instruments of precision at his disposal furnish him."

Paget has said that he believes the function of the nose is to filter the air and that the other ascribed functions are entirely subsidiary. He believes that nearly every healthy man has lost the power to breathe through the nose because of the tendency to alar collapse, that if more respiration was nasal, there would be less pulmonary disease.

Chapnell, in discussing Paget's annotation, quotes Catlin's book, "Shut your mouth," written in the early forties. Catlin was impressed by the healthiness of the American Indian children, whose mothers insisted on their breathing through their noses. Hagemann believes that the function may be emunctory to a large extent. Wright has said, "Vasomotor phenomena answer to every demand of physiologic need only so far as the mechanism is undamaged in all its parts. Repeated temporary exaggerations of physiologic response lead gradually to the graver forms of polypoid rhinitis and atrophic states." Thus it is seen that the function of the nose is carried on by virtue of its internal configuration and the mechanism of its mucous membrane. As the air enters the vestibule, it takes an upward course, passes over the superior surface of the inferior turbinate, over both surfaces of the middle turbinate, and enters the pharynx. The membrane of the pharynx is

essentially like that of the nose, except that it is not so specialized. In the pharynx, however, there is lymphoid tissue which is not encountered in the nose. In passing over these structures, the air currents take up the moisture from the surface, and are thus warmed, moistened, and filtered. In expiration, the air currents are directed largely through the inferior meatus by the posterior tip of the inferior turbinate. The function of the accessory sinuses in man is a moot question, but it is apparent that they are ventilated by the negative pressure effect of the passing air streams. The function of the tonsillar tissue in the pharynx is also a moot question; that it has a function in early childhood, even though it is not understood or known, I am willing to admit.

REACTIONS OF THE TRACT TO ENVIRONMENT

Symptoms in the upper respiratory tract are less common, and less often complained of in a warm, equable climate. This is because there is less necessity for the nose to over-function in order to prepare the air for the lower respiratory tract. Such a climate, however, has its definite drawbacks, as it has been shown that mental and physical productivity is at a lower level than in less equable environments. Huntington, in his "Civilization and climate," proves that output of factory workers increases with temperature change, and that no other elements of weather seem to have a real influence on such productivity. He explains the superiority of persons who live in hard, rugged climates by the subjection of their bodies to frequent and extreme alternations of temperature. The reasonable physiologic explanation of this phenomenon seems to be the stimulation of the vasomotor tonus.

Sewall says, "Climate is the summation of atmospheric conditions as recorded for a long period of time, or, in other words, it is the totality of weather, while weather is the physical condition of the atmosphere at a given time, or during a limited period.

"It was formerly thought that the atmosphere affected the body only, or chiefly, through the absorption of its elements by the lungs, but it has been found that this is not the case, and that these symptoms are caused by the effect of the atmosphere on the surface of the body. * * * In this connection, the various respiratory membranes are to be thought of as internal body surfaces, which are also brought in direct physical contact with the atmosphere. Heat, humidity, and stillness are the essentials in a bad atmosphere; coolness, dryness, and motion of the air constitute good ventilation."

From what has been described as the normal physiologic reaction of the nose, it can be seen how, with a perfectly acting mechanism, and particularly the vasomotor mechanism, the nose would be called on to function in different atmospheres. In the variable, rugged climate of the Northwest, with frequent climatic changes, one might expect that the upper respiratory membrane would become hypertrophic, whereas, in the warm, equable climate, where the nose is not required to function excessively, there might be very little change. It is easy to understand, then, that in our section of the country, in adolescent and early adult life, many symptoms might arise from the physiologic activity of the respiratory membrane, particularly as it is at this period of life that the erectile tissue function is at its height. This is why many such persons complain of nasal obstruction and excessive secretion. It has been variably estimated that the respiratory membrane might secrete anywhere from a pint to a quart a day. Patients often complain of obstruction on alternate sides, but as a matter of fact, this is quite normal. Scarcely ever would both sides of the nose be open to the same extent, for the reason that there appears to be a cycle of reaction; that is, while the mucous membrane of one nostril is filling to a point approaching obstruction, the other nostril is opening and throwing off its secretion, and by the time the nostril that is filled has completed its cycle, the other nostril has completed the opposite cycle. The reverse is also true. The cycle may not always take place to the extent described, but nearly to that extent.

Patients often complain of obstruction at night on the side on which they are lying. This is the result of passive congestion and is quite a normal condition. Complaint is also made of considerable amount of secretion in the pharynx in the morning, which may be quite natural, inasmuch as there is a collection during the night which they have not involuntarily disposed of, as they would have during the day by involuntary swallowing. Many such persons feel that the condition is detrimental to their health, but I have seen no evidence of this; it is usually the most robust type of patient who has this kind of complaint. With the condition of hypertrophic rhinitis superimposed on nasal obstruction caused by an anatomic defect, such as a crooked septum, the symptoms are naturally aggravated. In other words, there is an anatomic and physiologic obstruction. Often, in this type of case, the correction of the anatomic obstruction by some operative measure which conserves the membrane, will largely relieve the symptoms. If the symptoms

are not relieved in this manner, a change to a high, dry climate will often effect the change by natural processes. The dryness and equability of such a climate will take up the excess secretion that the hypertrophic condition is producing, and there will be little, or no variation to cause the excessive physiologic responses. It is in this type of nose that destructive intranasal operations were often performed formerly; these, I believe, are contraindicated.

Occupation has a great deal to do with the physiologic responses of the upper respiratory membranes. It has been shown that steam laundry workers, who have been engaged in this type of work a long time, invariably show rather definite grades of atrophy of the membrane of the nose. This can be explained on the basis of climatic conditions, already discussed. The lumberjack, the farmer, the delivery man, and others, who are constantly out-of-doors in all kinds of weather, are not affected with infection of the upper respiratory tract, or with symptoms seen so often in persons who live a sedentary, indoor life. Attention to personal hygiene will, in some measure, relieve the symptoms. The city dweller has found that he must protect his feet from becoming wet or cold, or have a "cold in the head." "The man clad all day in the same kind of clothing finds that he cannot remove any part of this clothing without the risk of taking cold. His wife wears high shoes or spats during the day, when it is warm, and has her neck and chest protected, but in the evening, attending a social function, she apparently disregards all sane principles of dress; yet it is observed that she is less disposed to catch cold than the man." This is another example of the hardening process. The vasomotor tone is better developed in one who exposes the surfaces of his body and changes his clothing to suit the occasion than in those who constantly dress in the same manner. Susceptibility to the physiologic changes can be largely controlled by training. That is, the city dweller can become a farmer or a rural delivery man, and gradually acquire the same physiologic reactions, and the reverse is true.

DESIRABILITY OF MOIST AIR

Much has been recently written and said about the effect of the relative humidity and ventilation in the home. At first this was done from an economic standpoint; it was noticed that the furniture began to creak and come apart in the winter time, and that by evaporating water, a greater feeling of comfort was obtained at a lower temperature. It has been observed that acute infec-

tions of the upper respiratory tract resolved more readily when the temperature was warm and the air moist, and that when steam inhalations were used to saturate the air with moisture, pharyngeal and laryngeal coughs could be largely controlled. During the cold weather the relative humidity of the air is very low. Sleeping out-of-doors on sleeping porches has been advocated as a health-producing habit, probably because of the wonderful health of those who live out-of-doors and sleep out-of-doors; but it does not take into account that people in the city live during at least two-thirds of the day, in a temperature sometimes 100 degrees above that which they might be subjected to at night. This causes too great a physiologic response to be endured by a respiratory membrane not accustomed to such changes.

VASOMOTOR RHINITIS

There is another type of physiologic reaction within the nose which is due to some derangement of the sympathetic nervous system, and results in what is called a vasomotor rhinitis. It may be occasioned by susceptibility to proteins, bacteria, food, and pollens, and can sometimes be controlled by removing the causal factor if it can be ascertained, and sometimes, if the causal factor cannot be ascertained readily, topical application to the sphenopalatine ganglion region, as shown by Sluder, is beneficial. Brubaker recently called attention to the physiology of sneezing. Sneezing may be the manifestation of the vasomotor rhinitis. It is customary for the human being, in order to clear the nose, to blow it in some manner, and he usually closes the open nostril and blows against the opposite nostril. This creates a strong positive pressure in the nasopharynx, and may produce untoward results, because it may cause infections of the ear or accessory sinuses. Animals are seldom affected because their only method of clearing the nose is by sneezing.

Effect of General Anesthesia—The influence of the physiologic response of the upper respiratory tract in the administration of general anesthetics is important. Warmed ether vapor has been suggested as the anesthetic of choice, but experiments have shown that the temperature of the vapor, when it reaches the trachea and larynx by either the warmed vapor method or the open drop method was the same, so that, in reality, there is no choice. The pharynx is very sensitive to any type of irritation, and the natural tendency for the pharynx is to react in an endeavor to expel any irritating factor, a reaction which results in coughing or vomiting. In deep anesthesia the pharyngeal reflex is subdued, but when the pa-

tient begins to recover from the anesthetic, this reflex should be considered, and aspiration of foreign substance into the trachea and lower respiratory tract avoided by making sure that there is nothing in the stomach that can be expelled by vomiting, and by placing the patient's head in a downward position, so that in case vomiting occurs, the vomitus will not be so likely to be aspirated into the larynx. The use of local anesthesia is becoming more widespread and it would seem logical to use this method whenever it is possible and advisable, in order to avoid complications in the lower respiratory tract.

In the presence of a definite, acute infection of the upper respiratory tract, general anesthesia is contraindicated, because of the very marked tendency for the infection to extend to the lower respiratory tract.

SUMMARY

The upper respiratory tract has a definite function, reacting differently under different environmental conditions. It would seem that, if the laity and physicians knew more about the normal physiologic reactions of the upper respiratory tract, there would be fewer complaints on the part of the patients, of symptoms resulting from physiologic activity. Moreover, persons could be advised how to live in order to avoid, in a large measure, the responses of the upper respiratory tract which come as a result of unhygienic living. The widespread use of the advertised "catarrh remedies," the use of spray solutions, and daily nasal douching could be eliminated because they have no beneficial effect; indeed I am quite sure that they have a considerable detrimental effect on the physiologic activities and integrity of the structures of the upper respiratory tract.

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BRONCHOSCOPY AND ESOPHAGOSCOPY*

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A. Kirstein, on April 23, 1895, first succeeded in obtaining a direct view of the vocal chords and bifurcation of the trachea. According to Mann, we may regard this as the birthday of direct laryngoscopy. To accomplish this, a thick, short tube with a Casper electroscope screwed on at right angles was employed. Cocaine was used as an anesthetic. Kirstein was greatly pleased and emphasized the importance of the method in the diagnosis and treatment of diseases of the posterior wall of the larynx. He did not develop the procedure, however, because he thought it might be successful in only a limited number of cases. He was entirely fortunate in obtaining the desired effect in only 25 per cent of the cases, partially so in 50 per cent of them, and failed completely in the remaining 25 per cent. He further considered the danger of the procedure too great to render it practical. The pulsation of the aorta, as seen through the instrument, influenced him to believe that the use of rigid instruments in the bronchi was too dangerous.

Killian, however, grasped the importance of the observation, and, within a few months, developed a technique which enabled him to remove a piece of bone from the right bronchus of a man sixty-three years of age. He employed a Rosenheim pharyngoscope which he passed down through the larynx after a previous application of cocaine. Killian continued to use this method and soon became convinced that Kirstein had overestimated the danger of the procedure.

L. von Schrotter, Pieniazek, Langraf, and Seifert had passed instruments through a tracheotomy wound beyond the aortic area and demonstrated the comparative freedom from danger. Sounds, dilators, and tubes were employed by these men. Pieniazek had even removed a foreign body situated deeply in the bronchus. Killian further experimented on the cadaver, tested the resistance of the bronchi, and convinced himself that, strengthened by cartilage, there was less danger while working in them than while working in the esophagus. In July, 1897, he first attempted lower bronchoscopy through an already present tracheal wound. At the same time he succeeded in upper bronchoscopy. Having demonstrated the possibilities of the procedure, Kil-

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lian and his assistants set about perfecting and simplifying the technique.

Dr. Hubert Arrowsmith, of Brooklyn, in a president's address before a meeting of the American Association of Per-oral Endoscopists, reviewed the tabulation of Louis Elsberg, who, at the first meeting of the American Laryngological Association in 1879, attempted the task of tabulating the American Rhino-Laryngological and borderland literature from 1809 to that date. The opinion was probably more or less general that inhaled or halted foreign bodies, in the upper air passages or the esophagus, resulted in practically 100 per cent mortality and that no measures had been successfully employed for their removal. It appears in the literature that Verdun, in 1717, did a bronchotomy for the removal of a foreign body from the trachea. In 1854, years before the laryngoscope had come into general use, Gross published an exhaustive treatise on this subject. In 1860, Horace Green, who may be called the "Father of American Laryngology," wrote a paper on "The Difficulty and Advantage of Catheterism of the Air Passages in Diseases of the Chest." He reported 106 cases treated. Probably inspired by the earlier reports of Green, Bennet, professor of clinical surgery in the University of Edinburgh, reported the introduction of a catheter into the bronchi of seven patients; in one of them he injected the lung eleven times, starting with two drachms of a 30 gr. to the oz. solution of silver nitrate and reaching one-half oz. of a 40 gr. solution. The resulting effect on the patient is not reported.

Arrowsmith gathered from Elsberg's report over 160 instances typical of the usual clinical histories and results in pre-endoscopic days, and summarized them in a manner which portrays the practice of the time. Foreign bodies in the upper air passages, 137; in the esophagus, 23; 2 lye strictures in the pharynx; 4 in the naso-pharynx; indeterminate, 1. The foreign bodies were: fruit seeds and pits, 23; beans, coffee grains and corn, 34; peanut, 1; nut shells, 13; piece of coconut, apple and raw sweet potato, 1; heads of grass seed, 2; needles and pins, 2; (no safety pins in those days) buttons, 4; coins, 9; pipe stems, 2; bones, 14; masses of meat, 3; 1 whole fish; 1 piece of sponge; stones and gravel, 5; 1 lead pencil; 1 slate pencil; metal articles, 10; charcoal, 1; cockle burrs, 5; pine burrs, 1; teeth, 2; tooth plates, 4; thimbles, 2; fish hook, 1; air gun darts, 2; 1 piece of thread, 1 glass bead, 1 match; 1 piece wood; 1 piece of oyster shell; 1 tracheotomy tube.

Among the above 160 foreign body cases there

were 22 deaths including one from stricture of the esophagus—only $13\frac{3}{4}$ per cent. Treatment had been unsuccessfully attempted with 6 patients. In the 22 fatal cases 19 autopsies were secured. In 41 instances foreign bodies were coughed up at dates varying from a few hours to 60 years—25.62 per cent.

There was an interesting series of tracheotomies, at that time called bronchotomies, immediately or remotely the foreign body was either expelled through the wound or displaced into the mouth, swallowed, and passed by the bowel. Immediate expulsion, 32; delayed, 18; total, 52 or $32\frac{1}{2}$ per cent. In some cases, when multiple foreign bodies were present, one was ejected immediately, and others later, at intervals of ten days to several weeks. There were 48 successfully planned extractions for the pharynx, larynx, trachea, bronchi and esophagus, which represent 30 per cent of all cases. With the post tracheotomy cough-ups, this gives a total of $62\frac{1}{2}$ per cent of the operative cases. The forceps, probes, hooks, and improvised instruments, were employed following tracheotomy. The esophageal foreign bodies (in one case a piece of meat) were removed by kneading; 3 by posturing and pounding on the back; 3 by mechanically or medicinally induced emesis; 4 by the bristle or sponge probang; 1 was removed by a double wire run through a web catheter; 2 by external esophagotomy; 1 by a floating hook on a whalebone stem. One death followed the use of a probang from a peri-esophageal abscess. Several patients died from perforation without interference. The success of treatment in lye strictures was indifferent. In 23 cases there was a complete recovery of 19, 82.61 per cent.

Arrowsmith concludes that this series is not a fair presentation of the histories of foreign bodies even in those times. Our own experience shows us how frequently they may be inhaled, forgotten, and their subsequent effects attributed to a great variety of other causes. The resourcefulness of our professional predecessors, in dealing with this class of cases without the aid of our present methods of diagnosis and armamentarium, is certainly to be admired.

Much might be written describing the instruments from the earliest conception of the employment of this method up to the present time.

My first set was a Bruning outfit which, I believe, was among the first brought to this country. Early in the work, Killian and others used a headlight for illumination. Bruning's set has, as you know, the light reflected from a lamp at the upper end of the tube. It was left for Dr. Chevalier

Jackson to place the light at the lower end of the tube. He also made the tubes lighter and more practical in every way. To him more credit is due, so far as I can learn, than to any other bronchoscopist in this country. Dr. Jackson took up this work with an unbounded enthusiasm which has been sustained throughout the years of his practice.

The anatomy, physiology, every aid to localization, etc., have received his attention. While he acknowledged a limitation of success in an earlier period, today, it is safe to say, that, there is scarcely anything in the way of foreign bodies in the bronchi or esophagus, not causing immediate death, which cannot be satisfactorily handled by him. Dr. Jackson's desire to instruct men in this line of work has prompted him to take them, in groups of six, for a period of two weeks' intensive training. It was my pleasure, a few months ago, to watch a demonstration of the use of the broncoscope on a dog by Dr. Hompes of Lincoln, Nebraska. He had recently spent two weeks with Dr. Jackson and he told me that, within that time, he had learned more about the use of the broncoscope than in a period of over six months spent in a well known foreign clinic.

The day is here when one cannot, with justice to himself and to the general public, pose as an expert in this work without the start secured from instruction given by a leader like Dr. Jackson, followed up by constant practice on the cadaver, manikin, and dog. The purchase of a set of instruments and the attempt to use them without such instruction is certainly criminal practice. I am glad to know that our State University is giving this line of instruction so that we may expect Iowa, in the near future, to have more well trained bronchoscopists.

Expert knowledge, in many cases, is required to diagnose the exact location of a foreign body in the chest. Along with auscultation and percussion, the radiograph is of much assistance. The localization of a foreign body in a bronchus, which does not cast a shadow with the latter, requires a great deal of skill.

Anesthesia, local or general, will depend largely upon the individual operator. Jackson commends Bruning's statement that the operator, who is not sufficiently practiced to pass the tubes without general anesthesia, is not justified in using it to overcome faults in technique. In the extraction of larger, sharp foreign bodies from the esophagus, deep general anesthesia is sometimes indicated to relieve muscular spasm and to prevent perforation. As a rule, however, this is not necessary. The fact is that deep anesthesia adds

enormously to the danger of respiratory arrest from pressure of the foreign body in the trachea, and on the peripheral nervous respiratory mechanism.

Local anesthesia is, of necessity, but superficial. Many operators prefer the application of it in older children and adults before the introduction of the tubes. In infants and younger children, for diagnostic purposes and the removal of foreign bodies, no anesthesia is necessary. Occasionally an adult patient is met with who is very excitable or hysterical. In such cases, where a growth from the larynx is to be removed, it becomes necessary to give a general anesthetic. The number of these cases, however, is rapidly reduced by the increased skill of the operator. In fact, "vocal anesthesia," so called by Dr. John B. Deever, is of the greatest assistance in all of this work.

Foreign bodies in the trachea and bronchi of adults can, many times, be removed without an anesthetic, although most men prefer local anesthesia. In some of these cases, where there is a stricture to dilate, a complex mechanical problem presented, or where cough threatens to cause perforation, a general anesthetic may be required.

In the presence of extreme dyspnea, we must not lose sight of the fact that the aid of the accessory respiratory muscles in keeping up respiration is most seriously impaired by deep anesthesia. In the hands of the average operator the introduction of the bronchoscope through a tracheotomy wound may be employed, and seems justifiable in dyspneic patients. It would appear, however, to be rarely necessary in one possessed with the skill of a Jackson.

When a local anesthetic, such as cocaine, is used either in the pharynx, the larynx, or low down in the chest, the addition of adrenalin serves a good purpose. The use of large doses of bromide and morphia, in certain cases, has its place. The cough reflex, however, should not be abolished for too long a period of time as it serves to clear out the passages.

When it is necessary to use general anesthesia in esophagoscopy the employment of ether or chloroform may be begun in the usual way, and at intervals, when it is necessary to interrupt the work, be further induced by covering the mouth with a napkin or sponge saturated with the anesthetic.

In bronchoscopy the procedure is the same. It is preferable to start the anesthetic with ether and, if necessary, to prolong it with chloroform.

Dr. Jackson's bronchoscopes have accessory tubes for the removal of secretion by suction and

for insufflation anesthesia. One of these accessory tubes also serves the purpose of carrying oxygen when an emergency arises. From a recent observation in his clinic, I get the impression that he is using suction less and sponges more for the removal of secretion.

The bronchoscope and the esophagoscope have aided not alone in the removal of foreign bodies from the passages, but have opened up a new help to diagnosis of anomalies and diseases along these tracts. Of the esophageal diverticuli Mosher has made an exhaustive study, while Hans Chiari has collected and described the congenital abnormalities of the trachea and bronchi. One accustomed to the use of these instruments readily notes the abnormalities of the mucous membrane along the tract.

Bronchitis has been more or less studied. It is interesting to note that, in some cases, auscultation is positive as to crepitation dry and moist in great profusion, while the endoscopic examination is practically negative. In certain cases the reverse may be true. Again we find cases in which auscultatory and endoscopic findings correspond. These discrepancies are to be explained apparently by the inability of the bronchoscope to reach the finer bronchioles where the disease may be located. On the other hand, the degree of swelling and secretion about the orifices which are accessible to endoscopic examination is worthy of comment.

The study of bronchiectasis is most interesting, and, at the same time, most trying, because of the frightful odor and the constant danger to the operator of receiving the infected material in the face. The latter remarks apply equally well to gangrene of the lung and to pulmonary abscess.

Dry catarrh of the trachea, tracheal ozena, and enchondromata are readily diagnosed, and a certain amount of relief secured, by means of the bronchoscope.

Bronchoscopic study of bronchial asthma is instructive. It reveals conditions of the mucous membrane and spasm of the bronchi.

Some of the work in diphtheria, in pre-antitoxin days, is worthy of note. For example, Pieniazek saved several children by working through the tracheotomy wound, using a forceps, and removing membrane from lower down in the bronchi.

Tuberculosis in the larynx and trachea, with ulceration and stricture, are hereby opened up for study and treatment.

Syphilis, in its many varieties, especially ulceration and stricture, can be diagnosed and treated with the bronchoscope as with no other method.

Scleroma of the trachea and bronchi, which fortunately is not common in this country, also falls within this field of operation.

In 1906, the *Berliner klinische Wochenschrift* reported that echinococcus of the lung was successfully treated by Wadsack and Kob, the latter doing the bronchoscopic part of it.

Benign tumors along the respiratory tract have been recognized and removed by different workers. It has also been possible to recognize and to afford relief to many malignant conditions along the tract as well as in the lung.

Pressure of the thyroid, resulting in a scabbard form of the trachea, has been demonstrated. The experience of Jackson, in this class of cases, has led him to make the recommendation that patients have the larynx examined before the giving of an anesthetic.

Many cases of sudden death under anesthesia, he thinks, to have resulted from the impairment of the motor enervation of the vocal chords or the presence of a tumor in the respiratory passage.

The question of the influence of thymus enlargement on the trachea was a disputed one before the day of the bronchoscope. It would seem that there still remains some doubt. For instance, Nager, in Sibenmann's clinic, reported the case of a three year old child with a typical history of a foreign body. Tracheoscopy and upper bronchoscopy showed nothing abnormal, but on laryngeal examination the abductors of the vocal chords were found to be paretic. Death occurred suddenly and unexpectedly shortly after the examination. Post mortem revealed hyperplasia of the thymus with a status lymphaticus. There was no evidence of change in the trachea or bronchi. His comment is, that had he found the same negative condition by tracheoscopy in a similar symptom complex, nothing could have been done; or, had the thymus been removed, it is scarcely to be expected that the life of the child would have been saved. An enlarged thymus is not the disease itself but a symptom of the lymphatic constitution. It does not act locally as the cause of death but simply marks out its victim as an individual especially vulnerable. It remained for Jackson to report his findings and success in the treatment of this condition. He said it had been disputed for many years whether the thymus could compress the trachea or not. It was reserved for him to refute by tracheotomy Frie de Leben's dictum, "There is no such thing as thymic asthma."

A boy of four came under Jackson's care with stridor and dyspnea. After a sudden onset of a croupous attack six weeks before, the condition be-

came steadily worse. Tracheotomy was done and gave no relief to the breathing. Tracheoscopy was made easier through the wound. He found that the tracheal walls were collapsed from before backwards, and approached each other during expiration. He employed a long tracheal canula to maintain respiration, reached down into the anterior mediastinum, pulled up the thymus, and removed it. Difficult breathing was immediately relieved and a perfect cure resulted. The radiogram taken previous to the operation rendered the diagnosis of thymic enlargement unmistakable.

Abscess resulting from caries of the spine, infection or carcinoma of the esophagus may compress the trachea and be diagnosed by means of the bronchoscope. A similar compression of the bronchi may result from tuberculous enlargement of the bronchial glands.

It is interesting to note that anthracotic lymphatic glands have perforated the wall of a bronchus and been coughed up, their passage up the trachea and larynx sometimes threatening life.

Mediastinal tumors may compress the tracheo-bronchial tree. Many times these growths cause recurrent paralysis much the same as does an aneurism of the aorta.

Aneurisms are also a common cause of compression of the tracheo-bronchial tree. Mann says, "Every one who passes a tube into the trachea in order to verify symptomatic diagnosis of aneurism thinks he is bound to find a smooth, round, pulsating tumor on the left side." This is a mistaken idea and the operator should get rid of it once and for all. In only one-third of a series of cases, mentioned by him, was the tumor situated on the left side; four times behind and to the right; two times in front and to the right. Stricture lying in the frontal plane was twice reported with anterior and posterior walls bulging. In another case the posterior wall only was affected; and, in still another, the posterior wall was deflected anteriorly to such an extent as to convey the impression to the eye of the complete obliteration of the trachea.

Hypertrophy of the auricles has led to bronchial strictures. In 1834, King reported four such cases and, in 1850, Friedrich diagnosed a case clinically and confirmed it post mortem.

The question of scabbard trachea and emphysema of the lung is suggested by Mann as a field for further investigation.

My idea, in the presentation of this paper, has been more to cover the subject in a general way than to give my clinical experiences. The presentation of individual cases is permissible in the discussion.

In conclusion my suggestions to one who would take up this line of work are:

1. Thorough knowledge of the anatomy and physiology of this region.

2. Thorough familiarity with the different instruments to be employed not overlooking the importance of sterilization as for any surgical procedure.

3. All means that assist in the localization of foreign bodies, such as the radiograph with insufflation of bismuth mixture; in certain cases, auscultation, percussion, etc., should be employed before operation is attempted.

4. When possible a duplicate of the foreign body should be carefully examined with a view to determining complications in its removal.

5. The instruments best adapted for the grasping and removal of the foreign body should be selected with the greatest care in each individual case. Some idea of Dr. Jackson's idea of preparation for the removal of a peanut may be appreciated when he suggests that 500 kernels be crushed with a forceps so that the operator may learn how much pressure to apply to a peanut without crushing it.

6. Pathological processes of this region should be well known to the operator so that he may recognize the individual abnormality when he sees it.

7. Gentleness at all times, so as to avoid damage, must be uppermost in the mind of the operator. When relief cannot be given injury must not be inflicted.

8. The embarrassment which might result from cessation of breathing must be anticipated and means for overcoming it must be at hand, such as: (a) tracheotomy set; (b) oxygen tank with the tube which may be attached to the arm of the Jackson bronchoscope for immediate use; (c) amyl nitrate; (d) use of the tube in respiratory failure with artificial respiration.

9. Let no man think he is a born operator in this line of work and let him realize that, if he practices every day for five years, he will be a much more skillful and successful operator, than if he has practiced daily but two years.

10. The operator must at all times have under perfect control his mental and physical faculties.

Discussion

Dr. Lee Wallace Dean, Iowa City (opening)—Dr. Pearson's paper has been a most interesting and instructive one to me. The paper was so complete that I am not going to attempt to discuss it. I am, however, going to give some of my own conclusions regarding the use of the bronchoscope and the esophagoscope. These opinions differ from those held

by some of our very best authorities and you will have to take them for what they are worth. Dr. Pearson's ninth requisite for the practice of bronchoscopy, I think, is the most important one. After we have done bronchoscopy for five or ten years, it is to our advantage to continue to practice with the dog. Constant work on patients or on dogs, or both, will give the best results. There are three opinions that I am going to mention regarding work in bronchoscopy: First—When doing bronchoscopy if the administration of a general anesthetic will materially assist in the removal of the foreign body general anesthesia should be resorted to unless there is some contra-indication other than the presence of foreign bodies in the esophagus or air passages. I always have the general anesthetic ready and, regardless of the age of the patient, if I find that the patient cannot be properly controlled without general anesthesia, the general anesthesia is given. I use chloroform, sometimes starting with ether and changing to chloroform. Second—If I think that I can remove a foreign body from the lung more quickly and with greater certainty by lower bronchoscopy than by upper bronchoscopy, I work by lower bronchoscopy. In children three years of age or less unless the case seems to be an easy one I am inclined to resort to lower bronchoscopy. In all peanut cases and bean cases I favor lower bronchoscopy because of the importance of removing all particles of peanut or bean that in this class of cases are liable to remain in the bronchi. In this class of cases I use aspiration through the opening in the trachea and find in the fluid aspirated numerous particles of peanut or bean. In infants operated by upper bronchoscopy there is always danger of edema of the larynx necessitating later a tracheotomy. I prefer to do my tracheotomy first, leaving the canula in for twelve hours and then closing the wound. Third—Again frequently following upper bronchoscopy in infants we get a laryngitis which causes hoarseness and interferes with the child clearing the lungs by coughing. In this type of case it is advisable to do a tracheotomy for drainage purposes. The tracheotomy keeps the infant from drowning in its own secretion. There is no danger, as Dr. Harned has said, of stenosis of the trachea if you perform a low tracheotomy, the tracheal incision should be below the upper three rings of the trachea.

Dr. J. B. Naftzger, Sioux City—In foreign bodies in the trachea or bronchi, Dr. Jackson calls attention and warns against any violent physical manipulations such as holding the child up by the heels, pounding him on the back, etc., because of the possibility of the foreign body dropping down and locating in the pharynx and the patient dying suddenly from a spasm of the glottis.

Dr. C. W. Harned, Des Moines—There is one little point that I would like to ask, whether or not anyone has had any experience in the matter of irrigation of the bronchi in cases of abscesses, crushed peanuts or beans. I devised a little instrument by

which aspiration and irrigation can be carried on quite successfully, flooding any part of the trachea or even the small bronchi, because it allows the saline or other solution to be carried in and carried out without any possibility of flooding any part of the bronchial tubes or the trachea and it certainly will carry away small particles of crushed peanuts and beans. I have never attempted to irrigate the bronchi but I have irrigated the upper part of the trachea in case of an abscess or where the lower tracheotomy has been previously performed, and it certainly assists in cleaning it and seems to me that it would obviate a number of bronchial pneumonia cases where crushed peanuts or other matter has been crushed and disseminated, if we could irrigate the lower bronchus and immediately withdraw the fluid, as I am pretty sure that it could be done by skillful operators. However, I have never attempted it myself and would like to know if it has ever been practiced.

Dr. W. W. Pearson, Des Moines (closing)—In regard to the question of anesthesia, the men who have done a great amount of this work usually conclude the recommendation by saying that each man should select the anesthetic, local or general, best suited to the case. Good men disagree on this subject. Jackson uses an anesthetic as little as possible. I mentioned in the paper the danger of cough and the instrument's puncture of the cavity wall from which the foreign body is being removed. Many men who are doing this work follow Dr. Dean's suggestions and introduce the bronchoscope through a tracheotomy wound. The near approach to the seat of operation through the lower tracheotomy wound affords some advantage. Some of these bean and peanut cases possess chemical properties that induce pneumonia. Edema of the larynx is always mentioned as a possibility following upper bronchoscopy by those who have experience in this line of work. Personally, I have never had edema of the larynx of sufficient degree to close off the breathing. I always enjoy recalling the case of a patient who had a foreign body in the trachea. I started in late in the evening; had it localized with the x-ray. I worked for three hours. Someone asked about the time the operator should work. I had a good stout fellow and he told me to go ahead. I had it up to the larynx several times. I was using a Bruning outfit and my light went out and it was late in the evening and I had to use a reflector and I kept feeling all the while I will get it the next effort, and I would bring it up, and I worked for three hours on the fellow. His larynx was pretty badly bruised up when I was through but it was the only ill effect. He had no chest trouble; I worked very carefully. It was his left upper bronchial tube and I would have to go in with my bronchoscope and raise the lower end of the tube and then push it down, but I did not succeed. He went to a better man. He went over to Dr. Jackson. A few days later, Dr. Jackson reported to me the location of the foreign body and the condi-

tion. He found the larynx was pretty badly bruised as the result of my efforts, but no trouble, he said, fortunately, in the lung, that I had committed no mutilating damage. Relative to Dr. Jackson's warning, about holding the head down, in a child. I have held the head down in several cases where the obstruction was down below the vocal cords. I happen to recall one case where the child was brought in the third or fourth day following the lodgment of a grain of corn in the trachea and the doctor in attendance said this had happened several times. He thought the child was dead. He took the child and held the head down and he began to breathe again. You see it works both ways. On the other hand, you might get it up into the vocal cords and cause obstruction there. In this case, it was a very easy matter to go in with the laryngoscope and reach the grain of corn with a pair of forceps below the larynx and remove it. We have had a few cases of that kind and have had very little difficulty. Some of the first I had, I employed lower bronchoscopy and they are very easily removed with the bronchoscope in the majority of cases. I recall one case which came up in Oskaloosa perhaps twelve years since and I opened the trachea and removed it and closed the trachea and the patient was taken back home the same day with no difficulty. As to how long to continue the operation, I have answered in the case of the big husky fellow who says "Go ahead." If that foreign body isn't causing any damage, you will find the men with most experience in this work limiting it to twenty or thirty minutes, then waiting a few days and if they have not succeeded, repeating their efforts. In the case of children, however, they usually limit it to ten minutes as there is much more danger here of edema of the larynx. The condition of the patient, however, influences the operator. Dr. Harned has inquired relative to abscess of the lungs. That has been worked over by a good many men but I think perhaps Dr. Lynch of New York has done some of the best work along this line in a children's hospital and has had great experience with the bronchoscope. He does not hesitate to go down into one of those cavities and wash them out. Many of them will use different solutions. One of the things which is of great importance, as it occurs to me, is a careful study of your patient when you are privileged to do that, the location of your foreign body and the character or type of the patient that you are to work with. The thing to do is to learn what problems are to be presented before beginning the operation. I recently had a very interesting case of a watch wheel on an axle three-fourths of an inch long, the wheel being the size of a quarter. The x-ray showed it just back of the larynx. One end of it was imbedded in the structure back of the larynx in the cervical region and of course any rough handling of this foreign body might lacerate the tissues and abscess result. It was possible for us to go in there and raise very carefully the axle from the posterior point of the puncture and carefully remove it with very slight damage. This boy had some reaction a few days

later and there was some infection at that point. We reached down—or rather Dr. Downing did, I had left town—and after using an application of a weak solution of silver nitrate to the wound for a few days, the boy recovered. Fortunately it did not form one of those distressing abscesses along the esophagus. And another thing I wish to mention also is the employment of the radiograph. Now in the esophagus, for example, many times we will have a radiograph taken and the patient is taken several floors above our office. I recall one case recently of a large sized button in a woman's esophagus. This woman said she had acquired the habit of sleeping with her mouth open and a neighbor had told her if she would keep a button in her mouth, it would keep her mouth closed. She swallowed this button in her sleep and had difficulty in taking food. She was brought up a day or two later and the picture showed the foreign body well down not far from the entrance to the cardiac end of the stomach. The patient was brought down and we introduced the esophagoscope following the curve of the esophagus very carefully and I got no glimpse of it, but when I went right on into the stomach and did not see it, I said "Let us have another picture." This was taken and the presence of the button was demonstrated in the stomach. These cases come to mind as I am discussing it and I was hoping other cases might be mentioned here so as to bring up some of the difficulties encountered in the removal of certain types of foreign bodies. One case rather unusual, and I think worthy of mention here, is that of a child that was brought up from Oskaloosa several years since. The child was a youngster of three or four years of age and the breathing was quite difficult. The situation was rather bad for work of this kind but without any use of anesthesia, we employed the laryngoscope, the Jackson, I think it was, and went into the larynx and I saw something that was rather peculiar and grasped it with the forceps and it broke up. It was nothing but an egg shell that had lodged in the larynx between the vocal cords and I removed most of it with my forceps. The result was immediate recovery. The case of cockle-burrs in the larynx is not as common here as in the southern countries where the children chew these burrs or they happen to get them in the mouth. We have had a few cases of that kind. The warning that is given is to be careful not to displace them when in the larynx, down into the trachea. As a rule, careful work with a local anesthetic is better than the increased hazard of a general anesthetic. To many of these youngsters you can explain what you are trying to do and can accomplish much that way. Another thing that is rather interesting, as it occurs to me now, is a pin in the chest. Examination with the radiograph showed a pin which was not below the diaphragm, it was above it and the patient was sent to me. She did not know when she got it in there, it was not giving her a bit of trouble. This patient had a long neck and I did not have a bronchoscope long enough to reach it. I thought it was better to let that rest, at least it was

not one for me to attempt its removal. Now I will say in a case of that kind where foreign bodies have been in for years, Jackson as a rule will go down with the bronchoscope into the smaller bronchi; knowing the position of his foreign body, he will approach it and if he does not quite reach it, he will figure around and even break through some of the tissue to get it. He has been successful in many of these cases. However, the truth of the matter is that a successful man can do most everything. You must remember, however, he has been doing this work a good many years. I do not pretend to mention the names of the men who have been employed in this work and who have done a lot of excellent work, but I chose to take the top liners and give their authority along certain lines of procedure or recommendation that it appeared to me would lead to the best results.

PYLORIC STENOSIS OF INFANCY*

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Pyloric stenosis of infancy is of special interest to the general practitioner. It is he who most frequently first sees the sick infant and upon whom much depends in early instituting the proper treatment. In reviewing the literature relative to this subject, one is impressed by the gradually increasing recognition of pyloric stenosis in infants as disease entities and also in the improvement in treatment. We owe all of this to our enthusiastic pediatricians and surgeons who have correlated their work.

Hill of St. Louis has stated that of one thousand children born in a foundling home with which he is connected, there were five cases of pyloric stenosis. And it is his belief that physicians generally are recognizing the condition more than in the past. In a most comprehensive paper on this subject before this Society in 1917, Dr. Waterbury of Waterloo said, "It is more than possible that the life histories of a large series have been reported by mothers in the simple statement, 'We could never find anything to agree with the baby.'" That it does occur with some degree of frequency in all communities, warrants us in being on our guard to make careful diagnoses in young infants. Early in the study of pyloric stenosis in infants there arose the question as to whether simple pylorospasm with pyloric obstruction and congenital hypertrophic stenosis were not the same disease, but with varying pathological change. The consensus of opinion seems to favor a clinical distinction. Downes quoting Holt says, "Definite persistent spasm of

the pylorus without hypertrophy is yet to be proven." Grulee in a recent article says, "I am here assuming that, as I believe, the conditions are distinct clinical entities with similarity in clinical picture." He further states that pylorospasm is several times as frequently encountered as congenital pyloric stenosis.

What is thought to have been the first recorded case of pyloric stenosis was described by Dr. Hezekiah Beardsley before the Medical Society of New Haven County, Connecticut in 1788. His patient was observed from two to five years of age when the child died. Autopsy revealed, in the words of Beardsley, "The pylorus was invested with a hard compact substance or schirrosity which so completely obstructed the passage into the duodenum as to admit with the greatest difficulty the finest fluid." Griffith states that perhaps an earlier case is that described by Armstrong in 1777 as "Spasm of the Pylorus." Professor Hirschsprung in 1887 or 1888 gave to the profession the first scientific description of the condition. Since which our present conception dates. Many other names might be added. There is no doubt that the condition called congenital hypertrophic stenosis has been so far, at least, the subject of greater study. Simple pylorospasm seemingly neglected.

The essential cause of congenital hypertrophy of the pylorus is entirely obscure. Theories as to its cause are many and interesting. They have as yet no practical significance. No one has explained the fact that over 80 per cent are males. Hirschsprung considered the hypertrophy to be due to a primary developmental hyperplasia. Most workers believe that some antecedent overaction of the muscle has occurred. H. C. Deaver assumes "a fault in embryonic development causing a stenosis" which causes a compensatory hypertrophy and not a pathologic hypertrophy. Then there are the theories of foetal hyperadrenalism as given by Pirie and Gray of London, and also pancreatic insufficiency.

Grossly—if the case is one of hypertrophic stenosis—at operation there is found an olive-shaped mass of cartilaginous consistency encircling the pylorus. Its color is paler than that of the stomach and duodenum. Its size varies depending upon the duration of symptoms, being larger in the more advanced cases. Histologically there is an hypertrophy of the circular muscle, the fibers being increased in number. The stomach may be found in a state of dilation or normal in size. In pylorospasm none of these changes are found.

Vomiting which slowly increases to the projec-

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tile type, developing in a previously healthy infant of ten days to two months of age should cause the physician to look for the other rather clean cut symptoms and signs of a pyloric stenosis. Accompanying the vomiting there will be found loss of weight which is more or less rapid. Marked peristalsis of the stomach from left to right and reverse peristalsis immediately preceding the vomiting. Constipation is usually present. A palpable tumor at the pylorus if persistently sought for may be found. Downes makes a great deal of this point. Of 217 cases which he operated up to April 1, 1920 there were only two ante-operative diagnoses of tumor which proved incorrect. He admits that the ability to feel the tumor may be a knack. A catheter passed into the stomach allows the gas to escape, and by allowing the baby to suck water from a bottle during the manipulation the abdominal muscles are relaxed. Downes says, "I myself believe that it is extremely important to develop the ability to feel the tumor in these cases, as its presence is conclusive evidence of the disease."

Some writers have placed considerable emphasis upon the diagnostic value of passing a catheter into the duodenum. According to H. C. Deaver this is considered only of academic interest and of little value. The knowledge gained of the stomach's capacity as well as the condition of food stasis may be of value.

The x-ray may be of distinct value in making a diagnosis. Strauss is a firm believer in the use of this diagnostic aid. By his method bismuth is added to mother's milk. The child "is rotated to the right side almost on its abdomen," when he says, "we will see the bismuth gravitate toward the pyloric end of the stomach and peristaltic waves are immediately visible in the pyloric antrum and pylorus. A small amount of bismuth now squirts through and then the pylorus clamps down tightly." Strauss describes peculiar snake-like contractions which may be seen in the pylorus and independent of the rest of the stomach. Upon these he bases an absolute diagnosis of pyloric stenosis. H. C. Deaver relies on the x-ray in confirming his diagnoses of stenosis. He advises immediate fluoroscopic of every infant with a history of progressive loss of weight and vomiting of any type. He says, "Such a child must be considered a potential case of pyloric stenosis until the x-ray proves that no stenosis is present." Such an eminent authority on this subject as Downes does not seem to place great reliance upon fluoroscopy. He believes that too much time is lost. He does admit however that it "May be of inestimable value in clearing up the diagno-

sis" when the history and other findings are confusing.

Carman of the Mayo Clinic is of the opinion that one must be guarded in making a diagnosis of pyloric stenosis in infants with the x-ray because of his experience with adults. Not only the initial outflow should be considered but also the total evacuation time, together with "the presence or absence of gastric dilation and the total clinical picture."

From these rather conflicting opinions as to the place of the roentgen ray in the diagnosis of the disease in question, one would deduct that its value may not be great in the isolated case. Certainly when the infant is seen from the beginning of the vomiting when there is comparatively small weight loss the fluoroscope may reveal much. And the patient should not be harmed by the procedure.

Into the treatment of pyloric stenosis of infancy there are many phases which enter. As in acute conditions where an early diagnosis indicates the line of treatment, so it is in the condition under discussion. Some prefer medical treatment, while others advise immediate operation. There are those who combine medical with surgical treatment. For the sake of discussion these three methods will be considered.

Medical treatment is the oldest. Taken throughout, the mortality is appalling. Gray and Pirie of London report fifty-four cases with a mortality of 80 per cent. Abt's figure would place it at more than 67 per cent. The earlier texts mention atropine and opium, lately in the form of papaverine. Gastric lavage is advised combined with rectal feeding. Recently Ernberg and Hamilton of Stockholm, Sweden, report fifty-seven cases treated medically with a mortality of three and five-tenths per cent. They lay stress upon the prevention of tissue dessication. Ringer's solution 100 c.c. to 150 c.c. is given twice daily per rectum or subcutaneously as long as weight decreases. Breast milk is preferred and feedings are small, usually about six meals daily. The patient is isolated. These men do not regard stomach washings favorably.

Sauer of Evanston, Illinois is enthusiastic over the results he has obtained in feeding thick cereal to these patients. He does not, however, rely upon non-operative treatment alone, and says, "Thick cereal feeding is not a panacea for pyloric stenosis." Thirty-five cases have been reported by him, twenty-eight of these received the non-operative treatment only. One of these died. The remaining seven were operated in addition to the thick cereal. It is significant that eighteen of

these cases were cared for in the home and the majority of them by the mother. None of the home cases died. Sauer recommends farina, rice flour, or a barley flour in preparation of the food. "One part of cereal to seven parts of fluid (three of milk and four of water) boiled in a covered boiler for an hour usually, makes a cereal of proper consistency." It must be cooked thoroughly and be sufficiently thick to adhere to an inverted spoon. Such food is given previous to the breast or breast milk. Less of the milk and more of the cereal is given when vomiting persists. Other workers have obtained good results with careful feeding, but all of these are the exception when compared to the results of the rank and file when using medical treatment alone.

Surgical methods in the treatment of pyloric stenosis have undergone evolution since the first gastroenterostomy attempted by Cordua in 1893. Lewis reported in 1917 the mortality of gastroenterostomy by Downes of 32 per cent; Richter 14 per cent, and Scudder 24 per cent. Deaver reports an interesting operation done by Burghard with a mortality of 37 per cent. This method consisted of incising the stomach and dilating the pylorus from within.

The procedure which is now looked upon with greatest favor is the Rammstedt operation. By Downes this has been called the Fredet-Rammstedt operation. Fredet in 1908 incised the serosa and muscularis down to the mucosa of the pylorus, then sutured the wound transversely. Rammstedt in 1912 advised omitting the transverse suture. By this procedure the mucosa protrudes into the wound and the stenosis is relieved. Downes gives 50 to 100 c.c. of normal salt solution or a 2 per cent glucose solution subcutaneously, two or four hours after operation, believing that hemorrhage is not encouraged as when given immediately before operation. Gray and Reynolds precede operation by several days of gastric lavage and 2 per cent glucose infusions. They advise that the operation be not undertaken as an emergency.

Strauss of Chicago has developed a more complicated operation than the Fredet-Rammstedt operation. After shelling out the entire mucosa, he cuts back a part of the inner surface of one side of the hypertrophied muscle, using this as a flap to fill in the gap made by the longitudinal incision.

Ether is the anesthetic of choice. Bevan would use a local anesthetic but comparatively few surgeons employ it because of the struggling which is bound to occur. Gas and oxygen have been used by English surgeons but not to a notable ex-

tent in this country. H. E. Ladd of Boston recommends ether anesthesia and also the introduction of a catheter into the stomach during the time.

A right rectus incision is the preferable abdominal incision and its closure should be made carefully, layer to layer. That this is the method of most surgeons seems to be the case; Deaver, however, sutures through and through with silk worm gut. Lewis applies adhesive from the ribs to the pubic bones as an aid to prevent rupturing the incision.

It is very evident that some difference of opinion exists as to when operation should be considered.

H. C. Deaver is of the opinion that all cases "diagnosed as pyloric stenosis should be operated on as soon as possible," and a more favorable prognosis may be given if the child is not more than one-third below normal in weight for its age. His results in thirty-eight cases treated by the Rammstedt operation shows a mortality of only seven and nine-tenths per cent.

Downes considers these cases as mild and severe. The severe ones requiring operation. The classification is determined by response to medical treatment. If a case improves, it is classed as mild and continued medically. If there is a weight loss of more than 20 per cent and improvement does not occur in seven to ten days, the case is treated surgically.

Goldbloom and Spence in a review of 163 Rammstedt operations done at the Babies' Hospital of New York City give the mortality of nineteen and six-tenths per cent. This of course includes all cases. From an analysis they deduct that "the duration of symptoms previous to operation is probably the most important single factor affecting the prognosis." A general rule followed at that hospital has been to operate as soon as diagnosis has been made.

Strauss and Abt determine into which group their cases belong by the x-ray. In the words of Strauss, "Any case in which one-half or more of the bismuth milk remains at the end of four hours is recognized as a case of pyloric stenosis and surgical intervention indicated. The cases in which 80 per cent or more of the bismuth has passed through the pylorus at the end of four hours can, as a rule, be cured medically." Of 163 cases so handled 107 were operated upon with a mortality of only about 3 per cent. Not any of the 56 cases treated medically returned for operation.

Surgeons differ as to post-operative treatment but in the main it is essentially the same—in that

the patients are kept quietly in bed. Mothers' milk is preferable. When cows' milk is used, it is modified to suit an infant of lessened digestive powers. Small feedings are the best. Salt solution or glucose solution are effective in stimulating these under-nourished patients.

CONCLUSION

1. Pyloric stenosis in infants is more common than has been recognized in the past.
2. Young infants with vomiting should be examined carefully so that a pyloric stenosis if present will be early diagnosed as such.
3. The x-ray may be a valuable aid in diagnosis.
4. Medical measures should be employed if the infant is seen early after symptoms appear.
5. After an earnest attempt in the use of non-operative measures has failed, operative procedure should be considered, bearing in mind that delay darkens the prognosis.
6. The Rammstedt operation is the operation of choice.

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Discussion

Dr. Matthew L. Turner, Des Moines—In regard to the etiology of pyloric stenosis, I recently read the resume of an article published by Karl Heusch of Berlin in December, 1921. He states that in most new-born infants there is a hypertrophy of or relative hypertrophy or enlargement of the pylorus, which disappears shortly or within a few months. This condition combined with an irritable stomach brought about by injudicious feeding and other factors, produces a muscular hypertrophy which causes reversed peristalsis and also emesis of materials without bile, and the author of the article mentioned feels that this is the cause of stenosis. I am not sure but this can be borne out, for this reason: In a large percentage of the children who were operated on by gastroenterostomy before the time of the introduction of the Rammstedt operation, we find several months after they have recovered that food is passing through the normal tract instead of through the artificial opening, which would indicate that this enlargement and obstruction disappears after a time. The essayist states that constipation

is usually present in these cases. I believe that that term as applied to this condition is a misnomer. In constipation there is a dry, hard stool. In these cases the stool is not dry and hard, it is nothing more than a little mucus with bile pigment which fails to pass because of lack of accumulation of materials. The statistics shown certainly indicate that the surgeon has it over the internal medicine man as far as treatment is concerned, and especially if the case is seen early. The experience that I have had (and I do not know that this counts for very much) has been entirely different. We have had eight cases with two operated. These two patients died from a pneumonia following the anesthetic. The other six patients were treated medically with a mortality of one. The last case I had was one in which the mother refused to take the child to the hospital, fearing we would insist on operation after arrival there. The child lost weight rapidly for two weeks and then improved. We stimulated her by normal saline, gave her mother's milk at frequent periods, and after a time she began to show evidence of food passing through. This would seem to be in accord with the essayist's statement that this obstruction disappears after a period of time. Another point the essayist makes would indicate that this is true. In connection with thirty-five cases reported by Sauer, he states that eighteen cases were treated medicinally in the home and that all of them recovered. I am just questioning whether or not we are not overtreating these children in passing into the stomach food that is absolutely indigestible and then manipulating the stomach, washing it out, etc., to such an extent that it is perhaps kept in an irritated condition. In case surgical intervention is indicated, the surgeon should get into the belly and out again as quickly as possible.

Dr. L. E. Kelly, Des Moines—With reference to the treatment of this condition; in the past seven years Dr. Harnagel and myself have operated on seven of these cases and six of the patients are alive. One patient died two weeks after operation, therefore in this case we charge the result up to the pediatrician rather than to the surgeon. At the time of my internship in 1907 to 1910 all cases were treated with posterior gastroenterostomy, and the mortality was very high except in the hands of a few surgeons who had developed an unusually rapid technic. Dr. Weller Van Hook of Chicago and Dr. Richter have an excellent record in a large number of cases operated by posterior gastroenterostomy. All of our cases have been operated by the Rammstedt method. A few points in the technic. The stomach should be thoroughly washed out before operation, the child should be given fluid by bowel and subcutaneously because many of these children are dehydrated when they come up for operation. As the anesthesia is necessarily very short, I doubt whether anything would be better in these cases than ether. Bevan recommends local anesthesia, and this may be done if preferred. Personally, I think there would be a good deal of struggling on the part of the child

and possibly some difficulty in delivering the pylorus. The incision should be very short, not more than one inch long. The tumor may be located by the finger, then taken hold of with a rat-toothed forceps and delivered into the wound. In this way you expose none of the intestine and the shock is much less than when a long incision is made and the intestine has come out of the abdomen. Split the muscle at the top of the tumor in the bloodless area, and if there is but very little bleeding do not stop to suture, but drop it back and close the abdomen. As I see it, the operation devised by Strauss has no value whatever, as it only prolongs and complicates the operation. One point that I have found useful is to be sure you have good chromic catgut in closing, because if closed with plain catgut or with chromic that is going to dissolve early, in five or six days you will have the intestinal contents herniate out through the incision. And this incision should be well strapped with adhesive close to the wound, not a lot of dressings put in between it and the adhesive straps. The adhesive should be applied right across the wound to hold the edges together. As a rule, this operation can be carried out in not more than ten minutes. As far as indications for the operation are concerned, except in very rare cases of absolute neglect in consequence of which the patient is in bad shape when he comes in, you have plenty of time to make a diagnosis. I think the use of barium or bismuth is detrimental to the recovery of the child, and in making the diagnosis in these cases it is not necessary to have in the intestinal tract deposits of heavy barium and bismuth. And the diagnosis should be made without the use of the x-ray in practically all cases. I have seen more cases of pyloric obstruction that were not operated on than cases that were operated. And these patients are always given a fair tryout by means of medical treatment by a man who is expert in treating children. In over half of the cases I have seen operation has not been indicated. Whether these non-operative cases are pyloric spasms or simply mild cases of pyloric stenosis I do not know, but in every case operated we have found a good sized hypertrophy of the muscle.

Dr. E. E. Morton, Des Moines—I do not feel that our babies have had a fair chance this morning. Were we to take a baby that is dehydrated and operate him immediately, we probably would have a dead baby. Then again, in operating on these cases in which there is dehydration, when the patient comes out from under the anesthetic I believe the proper thing to do is to put the child in a semi-sitting position and immediately give him from a medicine-dropper about half mother's milk and half water, thereafter feeding him every three hours during the first day. At the end of this time he should be given perhaps half an ounce of milk and not put to the breast until the end of the tenth day because the digestion is so badly upset that he cannot take care of it. Salt solution should be used because the baby is

so dehydrated that he is going to require something to get moisture back into the system. In an article which was published about 1917, Dr. Holt states that this condition is present before birth. In going back over these cases for five or six months pre-natal, the authorities have discovered this congenital condition, and I believe it may be conceded that every case of true pyloric stenosis is a congenital condition.

Dr. A. H. Byfield, Iowa City—I happen to be one of those who favor surgical treatment of pyloric stenosis. One not frequently stressed objection to the medical treatment is the fact that the infant is deprived of important elements necessary for his growth at a critical period of his life. The mixture which will go through the pylorus does not contain the necessary nutritional elements. I should like to point out the importance of evacuating by means of the stomach tube barium and other material retained in the stomach before the operation is done. This detail is important in contributing to the good result expected from surgical intervention. A sedative given to the baby before operation may also be advised. One should not spend too much time in making the diagnosis. Where one is in doubt and especially in the case of a child who is doing poorly, it is better to resort promptly to surgical treatment. The same applies to the dietary measures. If one is not sure of his technic in the administration of a thick gruel as advocated in this country by Dr. Sauer, much valuable time may be lost, making the condition of the patient less good for the operation which must finally be tried.

Dr. Brereton—I have appreciated very much the discussion by the pediatricians and surgeons. I approached the subject merely from the standpoint of the general practitioner, but I believe these cases do occur, and if one is on his guard the patients will be saved. I understand that within a radius of twenty-five miles of Emmetsburg some four or five of these cases have been discovered during the past eight months.

REPORT OF COMMITTEE ON ARRANGEMENTS, OTTUMWA SESSION, 1923

Receipts

Exhibitors	\$1,035.00
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Disbursements

Wapello Club Auditorium, Exhibit Room, and Scientific Program expenses.....	459.74
Entertainment, Reception, Ladies Entertainment, Smoker	480.53
Balance on hand.....	94.73

Total.....	\$1,035.00
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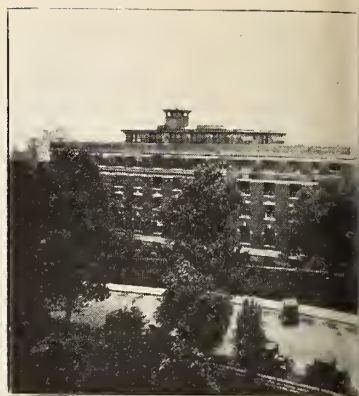
Respectfully submitted,

J. F. Herrick,

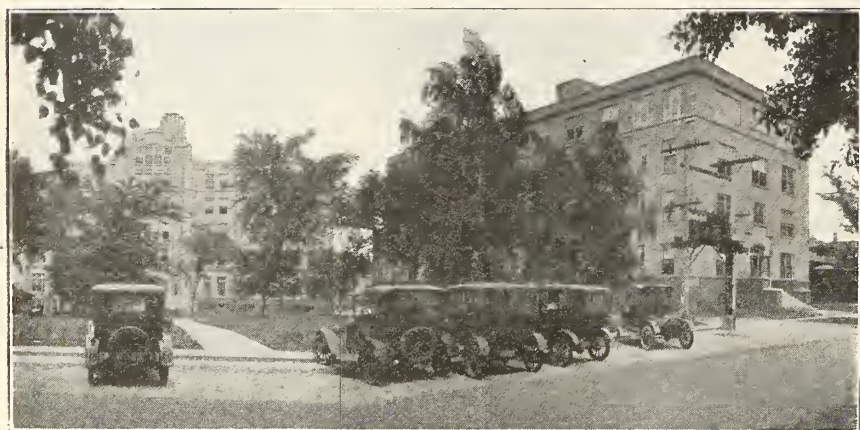
C. B. Taylor,

Local Arrangement Committee.

DES MOINES has five general standardized hospitals of modern construction and appointment, equipped with every modern facility for first class clinical and laboratory work, possessing a joint capacity of 650 beds.



IOWA MET



IOWA LUTHERAN HOSPITAL



MERCY HOSPITAL

G R E E

THE POLK COUNTY through its official takes great pleasure in only to the members of but to members of the states as well, and invite October 29, 30, 31 and N tific pabulum that will be

Tri-State District

CHARLES RYAN, *President*

H. E. RANSOM, *Secretary*

EXECUTIVE COMMITTEE

ADDISON C. PAGE, *Chairman*

WALTER L. BIERRING

A. P. STONER

W. S. CONKLING

CHARLES RYAN

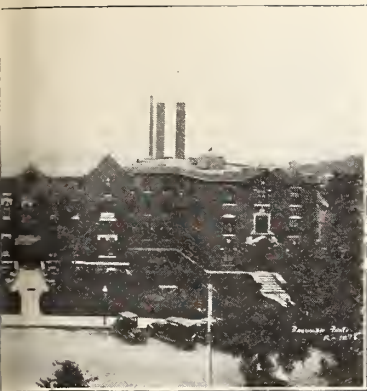
E. G. LINN

H. E. RANSOM

GENERAL CLINIC COMMITTEE

TOM B. THROCKMORTON, *Chairman*

Membership in a State Medical Society Is Prerequisite

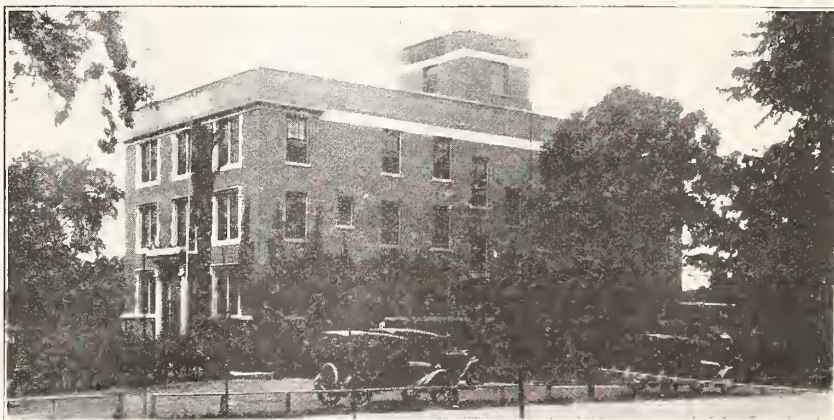


HOSPITAL

EACH of these institutions maintains a training school for nurses in conformity with the standards required by the state; has an organized staff representing all the specialities, a rotating interne service for its house physicians, and well kept clinical records.

I N G S

MEDICAL SOCIETY,
and executive committees,
giving hearty greetings, not
the medical profession of Iowa
session in adjoining sister
to meet in Des Moines
ber 1, and enjoy the scien-
ed at their disposal by the
Medical Association.



IOWA CONGREGATIONAL HOSPITAL

RECEPTION COMMITTEE
OLIVER J. FAY, *Chairman*
HOTEL COMMITTEE
F. R. HOLBROOK, *Chairman*
PUBLICITY COMMITTEE
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ENTERTAINMENT COMMITTEE
G. N. RYAN, *Chairman*
FINANCE COMMITTEE
W. W. PEARSON, *Chairman*
BANQUET COMMITTEE
J. F. AUNER, *Chairman*



DES MOINES CITY HOSPITAL

for Admission to All Meetings of the Association

CHRONIC INDIGESTION IN CHILDHOOD*

JOHN LOVETT MORSE, A.M., M.D., Boston, Mass.

In the first place, I want to thank you for the honor which you have conferred upon me in asking me to address you. I am especially grateful, because I am now a professor emeritus and because I was recently told by one of my confreres in Boston, fortunately older not younger than I, that I belonged to a past generation in medicine. This may be true, but, if by the past generation is meant the generation which learned to use its ears and eyes and hands and, above all, its brains in diagnosis and treatment, and not to depend entirely or almost entirely on laboratory findings, I am glad that I belong to that past generation. I believe, however, that, even if I do belong to that generation, I am able to appreciate the value of laboratory methods and their findings, to make use of them and to evaluate them properly in connection with the clinical findings. It has seemed to me, at times, as if some, at least, of the younger generation were not able so to do.

Causes of Indigestion—Normally, the digestive powers are equal to the work demanded of them, that is, the digestion of the food. The equilibrium of the digestion may be disturbed by a decrease in the powers of digestion or by an increase in the work to be done in digestion. The decrease in the powers of digestion may be due to overfatigue, either physical or mental, to diseases outside of the digestive tract, and to disease of the digestive tract. The increase in the work to be done in digestion may be due to improper methods of eating, to too much food otherwise proper, or to improper food.

Decrease in the Powers of Digestion—This element in the etiology should always be the one first investigated. A careful detailed study of the child's whole life should be made, no matter how much time it takes, to determine whether the child is overfatigued, physically or mentally, and what the causes of this overfatigue are. In many instances it will be found that the child does not get sufficient rest and sleep, that it is playing too hard or too long, that it is studying too hard, that it has too many social engagements or too much excitement, that there is friction in the home or in the school. If overfatigue is found and the causes are removed, many cases of indigestion will promptly recover. In such cases regulation of the diet and the administration of drugs will

do no good whatever, unless the causes of the overfatigue are removed.

Diseases outside of the digestive tract may sometimes be discovered in taking a careful history. Every child with indigestion should be stripped and examined carefully from head to foot. This examination should include the nasopharynx and the urine. The diseases, outside of those of the digestive tract, which most often cause indigestion in children are those of the nasopharynx and pyelitis. Until these diseases or abnormal conditions have been remedied, the indigestion will persist. No regulation of the diet and no drugs will relieve it, if there is continued absorption from diseased tonsils or abscessed teeth. It is most surprising how many cases of indigestion in children will be cured, if the life is properly regulated and other diseases and foci of infection cured.

Primary disease of the digestive tract is very uncommon in childhood. In indigestion, of course, there are no real pathological changes, but merely a disturbance of the functions of digestion. If there is disease, or rather a disturbance of the functions of the digestive tract, it is almost invariably secondary to a disturbance originating in the contents of the tract as the result of the ingestion of improper food or of bacterial fermentation in the food. If there is bacterial fermentation in the food, it is, as will be shown later, almost invariably primarily due to improper food and not to the implantation of abnormal bacteria. If there is disease of the digestive tract, it is evident, therefore, that the first thing to be done is to remove the cause, that is, the improper food. If only proper food is given at the proper times, in many instances, probably in the majority of the milder cases of indigestion in children, cure will result. It is most surprising how large a proportion of the cases of indigestion in childhood will yield to simple regulation of the life, the removal of foci of infection and reasonable regulation of the diet.

Increase in the Work in Digestion—One of the common causes of increase in the work in digestion is an improper method of eating. Many children eat hurriedly; they rush in from their play, hot and tired, gobble their food and rush out again to play more. In other instances they come home from school tired and nervous and eat a hearty meal. In other instances they swallow their food without proper mastication or wash their food down with liquids. Children that eat hurriedly are, moreover, very likely to eat more than they would if they ate properly. The treatment is, of course, obvious. Children must be

*Read before the annual assembly of the Tri-State District Medical Association at Peoria, Illinois, October 30, 31 to November 1 and 2, 1922.

made to rest for a time before eating. They must be made to eat slowly and to chew their food properly. They must not be allowed to wash their food down before it is properly masticated.

Too much proper food is a possible, but not a common, cause of an increase in the work in digestion. This brings up the question as to what is proper food for children, that is, what is a reasonable diet. In general, it is safe to say that the modern child is given too large a variety of food for its age and altogether too large an amount of sweets. This tendency to give a great variety of food is perhaps merely another manifestation of the general tendency to make children grow old too quickly. No one seems willing now to let a baby be a baby or a small child a small child. They want the baby to be a child, and the child a youth and the youth an adult, much to the detriment of them all.

Improper food is unquestionably the chief cause of disturbance of the equilibrium of the digestion by increasing the work in digestion. In many of the milder cases no especial type of indigestion has been established by the improper food. The functions of digestion are simply disturbed and no intolerance for any of the food elements has been established. In such cases the elimination of the improper articles of food is all that is necessary to bring about a rapid cure.

In most of the more severe cases, however, the conditions are more complicated and an intolerance, more or less marked, for one or perhaps two of the individual food elements has been established. This intolerance is usually the result of overfeeding with this element, but a secondary intolerance sometimes develops for another food element, which has not been taken in excess. This intolerance for one or more of the food elements may or may not be associated with fermentation in the intestinal contents as the result of abnormal bacterial activity. Fermentation may take place in any of the food elements. It may occur in both the carbohydrates and the fat at the same time, but never can occur in protein at the same time that it is going on in the carbohydrates or fat.

CLASSIFICATION OF SEVERE INDIGESTION

On the basis of an intolerance for one or more of the individual elements, indigestion in childhood may be divided into: (a) indigestion with intolerance for fat; (b) indigestion with intolerance for sugar; (c) indigestion with intolerance for starch; (d) indigestion with intolerance for protein; (e) indigestion with fermentation.

The line between indigestion with and without fermentation is necessarily very indefinite and in-

distinct, because there is always fermentation going on normally in the intestinal contents. The line between normal fermentation, fermentation as a part of simple indigestion and indigestion with excessive fermentation must evidently be very indefinite. Fortunately it is not very important to draw this line, because the treatment is essentially the same whether there is or is not fermentation.

The present tendency seems to be to lump all the severe forms of these definite types of chronic indigestion together under the term of "coeliac disease," and to treat them all as if they all had the same etiology and were of the same nature. It seems to me that this tendency is altogether wrong, that it prevents clear thinking and interferes with the careful study and reasonable treatment of these cases. They do not all have the same etiology, are not all of the same nature and therefore cannot all be properly treated in the same way. In my experience the most severe cases are those of fat indigestion or of primary starch indigestion with excessive fermentation and a secondary intolerance for fat.

SYMPTOMATOLOGY AND DIFFERENTIAL DIAGNOSIS

All the types of chronic indigestion in childhood have many general symptoms in common, such as loss of weight and other manifestations of disturbed nutrition. Among these may be mentioned dryness of the skin and hair, cold extremities, pallor, irritability, peevishness and disturbed sleep. Other symptoms, which vary according to the type of indigestion, are diarrhea, constipation and the alternation of diarrhea and constipation. The abdomen may be distended, normal in size or sunken. There may or may not be vomiting. Fever of varying degrees may or may not be present. None of these symptoms are, however, definite enough of themselves to justify a positive diagnosis as to the type of indigestion.

Something may be learned as to the type of indigestion from the condition of the bowels, the odor of the breath, the appearance of the tongue and the presence, absence or amount of gas, nausea and vomiting. Much more, however, can be learned from a careful analysis of the history, especially in relation to the diet. The diagnosis of the type of indigestion must, however, be made chiefly on the results of the examination of the stools, because the different types of indigestion have characteristic stools. The macroscopic examination of the stools is usually sufficient to justify a positive diagnosis as to the type of indigestion present. It should never be depended on

alone, however, but should be verified by a microscopic examination, because the microscopic examination sometimes gives additional information and sometimes shows that the conclusions drawn from the macroscopic examination were not entirely justified. The microscopic examination of the stools is not a difficult matter and requires but a few minutes.

Examination of the Stools—A small portion of the stool is spread on a slide and stained with either Lugol's or Gram's solution. Starch granules stain blue or violet. Another portion is spread on a slide and stained with a saturated alcohol solution of Sudan III. The neutral fat drops and fatty acid crystals stain red. Soap crystals do not stain with Sudan III. A drop of glacial acetic acid is then allowed to run under the cover-glass. The specimen is then heated until it simmers. This changes the soap to fatty acids, which then stain. If it is desired to determine whether the fat is in the form of neutral fat or fatty acids, another specimen is stained with carbol-fuchsin. This does not stain neutral fat, but stains fatty acids a brilliant red and soaps a dull red.

I am aware that the chemical examination of the stools has seemed to show that the results obtained by this method of determining the amount of fat in the stools are unreliable. Nevertheless, I have found this method most helpful in clinical work and still use it. Common sense must be used in the interpretation of the findings of the microscopic examination of the stools. Unless the character of the food which the child is taking and the relation of the different food elements in the food to each other are borne in mind, erroneous conclusions may easily be drawn and, unfortunately, often are.

The bacteriologic examination of the stools is, in general, not of much clinical importance in the diagnosis between the different types of indigestion. Little additional information is, as a rule, obtained from it. The presence of many iodophilic bacteria, when the stools are stained with Lugol's or Gram's solution, indicates, however, an impairment of the powers of digestion of starch, even if no undigested starch is seen. The intestinal flora must be, of course, either fermentative or putrefactive, that is, one which forms acids from the carbohydrates or fats or alkalis from the proteins in the intestinal contents. The type of flora can, therefore, always be quickly and easily determined from the reaction of the stools. The reaction can be determined by placing a piece of wet litmus paper on the stool. It is important that the stool is not contaminated with

urine. It is better to break up the stool so that the reaction is determined from the inside rather than from the outside. The reaction of the stool is most important. If only one test is possible, the reaction gives the most valuable information.

In the acid stool of carbohydrate indigestion the presence or absence of organisms of the gas bacillus group is of considerable importance in indicating the treatment. The determination of the presence or absence of the gas bacillus by the fermentation test is not difficult and can be carried out by any one in his office without special training. A fermentation tube, test tube and glass spatula are cleaned thoroughly with concentrated nitric acid and washed with water until the reaction is neutral. One c.c. of Dextri-maltose and 1 c.c. of the stool are then placed with the glass spatula in a test tube one-third full of water. This is boiled vigorously for one-half minute and poured into a fermentation tube, the tube being tilted back and forth to eliminate bubbles. The tube is stoppered with flamed cotton and placed in the incubator at 37° centigrade for twenty-four hours. A warm room will do almost as well. The tube is then inspected for gas and the amount noted. If no gas is formed or the bubble is no larger than a pin head, then the result is negative. If there is less than one-half inch of gas, the result is questionable. If there is one-half inch or more of gas, the result is positive. It must be remembered, however, in interpreting the results of this test, that the presence of a few gas bacilli does not necessarily prove that they are the cause of the disease.

There is an excess of putrefactive organisms in protein indigestion. Porter and his co-workers have recently developed a method for the recognition of this type. It can be carried out, however, only in a well-equipped laboratory. Others have, however, claimed that his conclusions are faulty. It is possible that organisms of the butyric acid group or the bacillus acidophilus may be of importance. There are, however, no easy methods for recognizing these organisms, and there is no specific treatment, if they are found.

THE STOOLS IN INDIGESTION

Fat Indigestion—The stools are usually large, semi-solid, gray and acid in reaction. They are sometimes loose and frothy and extremely acid, and sometimes dry, hard and crumbly. They are almost always gray, the white color due to soap being seldom seen in the stools of children. They often contain considerable mucus, especially if they are very acid. The odor is acid, often that of butyric acid. The oily stools and the small

soft curds so often seen in the stools of fat indigestion in infancy are almost never seen in childhood. Microscopically the fat is almost never in the form of neutral fat, but usually in the form of fatty acids, although sometimes of soap.

Sugar Indigestion—The stools are loose, yellow or green, frothy and acid in reaction. The odor is that of acetic or lactic acid. The stools often contain mucus and are very irritating to the skin. Microscopically, little abnormal is to be seen, except undigested food particles which have been hurried through the intestines.

Starch Indigestion—In the milder cases the stools are loose, yellowish-brown or green, acid in reaction and have the odor of acetic or lactic acid. In the severer cases the stools are large, brown, mushy, acid in reaction and odor, and contain considerable mucus. When there is, in addition, a secondary disturbance in the digestion of fat, the stools are often gray in color and even more acid in reaction. The odor is very peculiar, being a combination of a foul odor with that of butyric acid. Microscopically the stools show undigested starch and iodophilic bacteria, and in the severe cases with secondary fat intolerance large amounts of fat.

Protein Indigestion—The stools are loose, brownish, and alkaline in reaction. The odor is foul or musty. They usually do not contain much, if any, mucus.

Indigestion with Fermentation—The characteristics of the stools are the same as in the other types of indigestion with the manifestations of fermentation superadded. The stools are likely to be frothy and to contain considerable mucus. The acidity or alkalinity of the reaction is increased, according to the type of fermentation present, and the odor is more acid or more putrefactive.

Treatment—There is no place for the so-called digestants in the treatment of chronic indigestion in childhood. It is safe to say that there is never an insufficiency of either pepsin or hydrochloric acid in these cases. Pancreatin is destroyed in the stomach and can, therefore, be of no use. There is nothing to suggest that there is an insufficiency of the bile salts. There is likewise no place for drugs in the treatment of this condition, except for the temporary relief of symptoms. Tonics, appetizers and antifermentatives are alike powerless to remove the cause of or to cure the disease.

Regulation of the life of the child to avoid overfatigue, either physical or nervous, care of the general hygiene and the enforcement of proper methods of eating are of great importance

and will relieve many of the mild cases. Further treatment consists primarily in the regulation of the diet to fit the digestive capacity of the individual child. The element or elements which it can not take care of must be cut down to the point where it can take care of them. This point can only be determined by the examination of the stools. As a general rule, it is advisable to rapidly reduce the amount of the food element at fault to a point below the tolerance, and then to increase it to the point of tolerance, rather than to find this point by gradually diminishing it. The deficiency of calories which necessarily results from the reduction of the amount of the offending food element must be made up by increasing the amounts of the other food elements in the food. The amount of the element at fault should be gradually increased as the tolerance for it increases. In general, it is not necessary to consider the vitamins in prescribing the diet in these cases of chronic indigestion in children, because it will be found that even on very unusual and restricted diets there are almost invariably enough vitamins present. They should be thought of, however, in order to avoid possible trouble from an insufficiency of one or more of them.

It is evident that, when indigestion is treated in this way by regulation of the diet, the physician must know exactly the composition and caloric value of all the foods which he orders. He must not only understand the matter himself, but he must be able to explain it to those who have charge of the child. It is not sufficient to give general directions as to cutting down one or more of the food elements. He must give explicit directions as to just how much of each food element is to be given, or at least the maximum amount of the offending food element and the minimum amount of the other food elements. It is necessary to have tables showing the caloric value of various foods, and the content in grams of fat, carbohydrates and protein of each food, to give these to the parents and to show them how to use them. This is not as difficult as it seems, because all educated people now, as the result of reading the lay journals, know something about the different food elements and the caloric value of foods. In fact, many of the laity know more about these matters than the average physician. It is very easy, as a rule, to get the cooperation of the parents. It is also easy to get the cooperation of the children. In fact, children will follow a diet far more closely, and are much less likely to overstep its bounds, than adults.

In mild cases of fat indigestion it is usually sufficient to cut out butter, cream and bacon and

to limit the number of eggs. In more severe cases the milk should be skimmed and eggs cut out entirely. In the severest cases it is necessary to have the fat entirely removed from the milk by centrifugalization and every source of fat in the food removed. I have seen children so sensitive that the fat contained in one or two ordinary crackers would show in the stools. I have even seen a child set back for several months by giving a piece of butter the size of a pea.

Sugar indigestion usually ceases promptly when all sugar, candy and sweets, such as ice cream, cake and cookies, are removed from the diet. Sometimes it is advisable, as in indigestion in infancy, to change the form of the sugar rather than to cut it out entirely. This, however, is usually not necessary.

Mild cases of starch indigestion are due more often to potato starch than to any other. They are promptly relieved when potatoes are removed from the diet. In general, it is advisable not to have healthy children eat potatoes daily and to limit the amount of potatoes which they eat. Certain children have an intolerance for certain types of starch, while others are intolerant of other types. It is often possible, therefore, in the milder cases of starch indigestion to continue to give starch, provided the kind of starch is changed. In general, the starch of rice and wheat is more easily digested than the other starches. In most severe cases of starch indigestion it is necessary to cut starch entirely out of the diet. Even a little will do harm and prevent improvement. In these cases of severe starch indigestion there is almost invariably a secondary intolerance of fat. The diet, consequently, must be made up almost entirely of proteins. It is not as difficult as it at first appears to plan a diet composed entirely of proteins, which will contain a sufficient number of calories. Fat free milk must form the basis of the diet. It may be given plain, in the form of junket, or in the form of blanc-mange prepared with gelatin. Meat, especially the white meat of chicken, which contains less fat than other meats, is usually well borne. Protein may also be given in the form of white of egg. Another useful way of giving protein is in the form of cottage cheese. Casein may also be given in the form of casein flour made into biscuits or bread. In the severest cases fat should not be used in the preparation of these biscuits or bread, because of the intolerance of fat. I have usually used the diaprotein flour. Eight ounces of fat free milk contains 80 calories. A level tablespoonful of chopped chicken about 17 calories, and a rounded tablespoonful 25 calories. The

cottage cheese made from one pint of skimmed milk contains 72 calories. The six or eight muffins made with a measure of diaprotein flour contains 184 calories. It is usually advisable, however, not to give a strictly protein diet continuously, because of the danger of acid intoxication. This can be avoided and the caloric value of the food increased by the addition of sugar to the food. As a rule, children with starch indigestion can bear a small amount of sugar, if the diet is otherwise made up entirely of proteins. It is advisable to give this sugar in a form which is absorbable high up, and which leaves little residue in the intestines. Corn syrup meets these indications better than any other form of sugar. This is composed of maltose, 20 per cent; dextrose, 15 per cent; dextrin, 32 per cent; cane sugar, 3 per cent. One ounce, by volume, contains 136 calories. It is usually impossible to give children more than three ounces of corn syrup daily without causing disturbance, although some will take as much as five or six ounces daily. When these patients begin to improve, a little starch can be added to the diet and also a little fat. In some cases the results are better, if fat is first added; in others, if starch is first added.

In protein indigestion the amount of protein in the diet must be cut down to the minimum protein need and the caloric requirements made up by an increase in the amount of carbohydrates, the increase being greater in the starch than in the sugars. In general, it is wise to keep the fat low in these cases. Protein indigestion is relatively uncommon and usually yields promptly to treatment.

In those cases in which there are marked clinical evidences of fermentation, bacteria undoubtedly play an important part in the production of the symptoms. They presumably also play a part in those cases in which the evidences of fermentation are less marked. What proportion of the symptoms in a given case is due to bacterial fermentation, and what proportion to disturbance of the chemical processes of digestion is, however, almost impossible to determine. It is likewise impossible to know whether the trouble was originally due to bacteria, or whether the bacterial fermentation is secondary. In general, however, it is probable that the difficulty was not originally due to bacteria, because it is impossible to permanently implant any organisms in the intestines by giving them in the food. Fortunately, it is unimportant to know which is primary, because, whether primary or not, abnormal bacterial activity must be stopped. It is impossible to permanently change the intestinal bacterial flora by

giving bacteria by the mouth, although the flora may be somewhat modified temporarily, if the bacteria are given continuously. The character of the flora can only be changed by changing the composition of the food, that is, by changing the medium on which the bacteria grow. If it is suitable, they thrive; if it is unsuitable, they do not. Cutting down the proportion of carbohydrates and increasing that of the proteins in the food, therefore, changes the flora from the fermentative to the putrefactive, while cutting down the proportion of the proteins and raising that of the carbohydrates changes it from putrefactive to fermentative. This can be proved by bacteriologic examination of the stools, but is shown equally well by the change in the reaction of the stools, the stools being acid when the bacterial flora is mainly fermentative and alkaline when it is mainly putrefactive. Organisms growing on fat have relatively little to do with fermentation in the intestinal tract, but the products of their activity increase the acidity of the stools. The treatment by regulation of the diet which is indicated by the examination of the stools thus not only aids the weakened digestive powers but also diminishes fermentation by changing the bacterial flora.

When the organisms of the gas bacillus group are the cause of the fermentation in the intestinal contents something may also be done to limit their activity by the administration of organisms which produce lactic acid. The best type for this purpose is perhaps the bacillus bulgaricus. It is more effective when given in the form of buttermilk than in tablets or cultures, because of the far greater number of organisms which it contains. Furthermore, the buttermilk contains considerable amounts of lactic acid which is itself inimical to the growth of the gas bacillus. The lactic acid forming organisms are also of some benefit in the treatment of protein fermentation, because they are also inimical to the growth of putrefactive organisms. In such cases the milk may be modified to contain a low protein and high carbohydrate and the organisms grown in it. It must be remembered, however, that the lactic acid organisms can not change the bacterial flora permanently. This can only be done by so changing the diet as to change the character of the culture medium in the intestines.

PROGNOSIS

The prognosis depends on the severity of the individual case, the thoroughness of the treatment, and whether or not the parents cooperate in the treatment. Recovery is usually prompt in

the mild cases due to fatigue, parenteric infections, improper habits of eating and an excess of proper food, if the cause of trouble is removed. It is fairly rapid in the cases which are due to improper food, if an intolerance for one of the food elements has not been established. In the severe cases in which an intolerance for one or more of the food elements has been established, recovery is a matter of months and often of years. It is almost invariably interrupted by relapses. The most stubborn cases are, in my experience, those of severe starch intolerance; next, those of severe fat intolerance. In time, however, if, in spite of apparent lack of progress and frequent setbacks, treatment is kept up along the proper lines, recovery almost always eventually takes place.

ECTOPIC GESTATION WITH REPORT OF CASES*

THOMAS W. NUZUM, M.D., Janesville, Wisconsin

Ectopic gestation occurs sufficiently often, is attended with such alarming symptoms and if not early recognized and properly treated, is attended with so high a mortality rate that it is properly classed as one of the major causes of an acute abdomen.

The primary attachment occurs in the tube in the majority of instances, and when the tube becomes over distended; which occurs at the end of four to eight weeks; it ruptures causing more or less severe pain, shock and hemorrhage often accompanied by vomiting and syncope at which time the fœtus dies or the ovum becomes attached to some of the surrounding viscera also retaining some attachment to the ruptured tube.

From this time on the ovum continues to grow and form for itself a sack composed of the uterus, broad ligaments, omentum and intestines, a number of cases having been recorded where full term pregnancy was reached.

1. The most frequent cause of this condition is tubal disease, this making the descent of the impregnated ovum from the peritoneal cavity to the uterus through the tube more or less difficult and slow.

2. Double uterus with more or less deformity of the tube.

3. Sterility from lack of development, stricture of the tube, peritoneal adhesions or accessory tubal astia.

The intestines, omentum, uterus, broad liga-

*Read before annual assembly Tri-State District Medical Association at Peoria, Illinois, October 30, 31, November 1 and 2, 1922.

ments and peritoneum becomes vascularized and so firmly attached as to form a portion of the sack from which it is quite impossible to separate them.

The ovum may rupture into the broad ligaments, and there develop, or the fertilized ovum may remain in the ruptured Graafian follicle. Williams has proven that the fertilized ovum has traveled from the opposite side from the corpus luteum and may have become enlarged to such an extent as to become stuck in the tube.

A history of gonorrheal salpingitis has been found in 66 per cent of the cases by Kustner.

Obritz found adhesions of the tips of the fimbriae in fifteen out of twenty-three cases. Mandel and Schmidt ligated one tube in fertilized rabbits and pregnancy occurred in the distal end of the ligated tube and in the opposite tube: when both were ligated they developed in the distal end of each: when the ligatures were applied to the uterine ends extra uterine pregnancy did not occur though dead ovum were found in the tubes.

2. In physical examination the uterus is enlarged, the parts are blue and congested and the uterus is pushed to one side when the ovum has obtained considerable size. Often a decidua is shed which is a complete cast of the inside of the uterus, this has diagnostic significance when found.

The early symptoms are: First—Missed or unnatural menstrual period followed by more or less dribbling as a rule, and breast phenomena which are common to early pregnancy. Second—At the end of four to six or eight weeks a sudden attack of pain, faintness, shock, and maybe nausea and vomiting occurs from which the patient may rally after a time, unless the amount of hemorrhage is great and continues, in which case prompt surgical relief is necessary to prevent a fatal issue.

Rupture may take place into the broad ligaments in which case the foetus may continue to develop and possibly go on to term, or into the peritoneal cavity where the fate of the ovum will depend upon the amount of hemorrhage or whether the placental attachment has remained intact in which case abdominal pregnancy may occur as in one case here reported.

Diagnosis—By bimanual examination one can determine before rupture takes place that there is a small tumor mass in one fornix and this, in connection with the symptoms, will warrant one in making the diagnosis.

Many cases, when the rupture takes place early and hemorrhage is not extreme, recover without a diagnosis having been made, or the symptoms

attributed to miscarriage and the uterus curetted as I have many times observed, or as appendicitis, uterine colic, or merely colic.

I have known cases even where the symptoms were alarming, and the amount of hemorrhage quite large and the necessity of immediate operation seemed urgent, recover after evacuation of a so-called pelvic hematocoele.

The diagnosis is usually easy if one can secure a careful and intelligent history and link this with the physical findings.

The missed or unnatural period, the dribbling over period of weeks, breast symptoms which are strongly suggestive of pregnancy, attacks of pain more or less severe, the sudden onset of pain, collapse, shock, syncope, nausea and maybe vomiting, all indicative, and in a short time showing evidence of severe or extreme loss of blood, such as rapid feeble pulse, pale, blanched countenance, and nausea, sub-normal temperature, cold clammy sweat, and upon bimanual examination one can determine the presence of a mass at the side of or posterior to the uterus.

1. Without a careful history one might easily mistake the condition for an appendiceal abscess, especially where the mass is on the right.

2. A ruptured stomach or duodenal ulcer seldom occurs without a history of digestive disturbances of a recurrent nature which have extended over a long period of time. The sudden onset following a full meal, the intensity of the pain, the location of the pain is quite in contrast with that of a ruptured ectopic.

3. A gangrenous or ruptured gall-bladder would give symptoms much like the former, and here one must consider the history of former digestive disturbances, attacks of colic with pain extending to the right scapula, jaundice, more or less marked tenderness and rigidity in the hepatic region and a palpable mass may often be made out below the liver margin.

4. A cyst with a twisted pedicle may cause menstrual disturbances which simulate a ruptured ectopic, but the symptoms come on more gradually, are less severe, and unless there is much peritonitis and distention, one can outline the tumor by bimanual examination.

5. A diverticulum with obstruction of the bowels gives a history of former attacks of pain of a colicky nature, the pain comes in paroxysms, often the peristalsis can be seen and felt on the surfaces; vomiting is severe and soon becomes fecal, great shock and prostration quickly supervene, more especially, if the small intestine is involved and without speedy relief the patient dies of toxemia.

6. Pus tubes are usually bilateral, there is a history of vaginal discharge, urinary disturbance and often menstrual disturbance, with aggravation of the pain at that time.

Physical examination reveals the uterus "Eingamuert" or set in a stone wall as the German express it.

In some cases the diagnosis may still be in doubt; but there is very evident an acute abdominal condition which requires immediate surgical relief.

The prognosis in the vast majority of cases, is grave without early surgical intervention; but when operated early with the aid of transfusions when required, the percentage of recoveries is large, without early and proper surgical interference the percentage of mortality is high. Medical treatment is limited to relief of pain and to combat symptoms as encountered.

Report of Cases

Case No. 1. Mrs. B., a young married lady of twenty-two had the usual signs of extra uterine gestation and pain, nausea, syncope, shock extreme and a mass could be felt in the right fornix and Douglas cul de sack. Upon the history and findings a diagnosis of extra-uterine gestation was made and an operation speedily performed.

The right tube was ruptured and adherent to the sack. The uterus was double, each body having a separate cervix, and the septum in the vagina reached to within two inches of the ostium vaginae.

She made a good recovery and five years later gave birth to a fine son and this was followed rapidly by four or five more children.

Case No. 2. Another was a young married woman with her first pregnancy. She has been very ill for nine days, was treated for abortion and curetted, also for displaced uterus. When I saw her she was suffering from peritonitis, but the history and findings were classical for a neglected extra uterine gestation which had ruptured bled profusely, excited an active peritonitis, and upon opening the abdomen we found a ruptured appendix complication with an extensive peritonitis which rapidly proved fatal.

The pelvic contents were evacuated through the vagina and consisted of some three pints of infected blood clots.

Our records show twenty-nine cases of ectopic gestation with three fatalities. The other was due to influenza complicated by double pneumonia, which came on one week after operation, when the patient was well on her way to recovery. This occurred at Ft. Sheridan during the first onset of influenza and she was in the hospital where the boys were dropping away fast.

On the day of her death four died in that hospital inside of thirty minutes, all of flu pneumonia.

This lady was the wife of an officer, the diagnosis had been made before it ruptured; but operation refused, later she was curetted by our superior officer and only came to operation after rupture had taken place and her condition from pain, shock and hemorrhage was extreme.

Two cases of severe type refused operation and recovered after a protracted illness.

The last case which I wish to present was as follows—her weight three months before was 157 pounds, at present 132 pounds.

Her family history was good with the exception that one sister died from cancer of the breast. She had never been ill.

Last January she was seized with severe pain in the abdomen; it came on suddenly; she had been constipated for two weeks before; she went to bed, took enemas which gave relief, was confined to bed for two days, and has not been well since, having suffered from abdominal pain and was compelled to take physic each p. m.

Physical examination—Appetite is poor, gas on stomach, distress after eating, constipated, heart rapid and feeble, pulse 110 and temperature $99\frac{1}{2}$, coughs some and raises a trifle, sleeps poorly and sweats at night, has much abdominal pain, is very nervous, passes urine often with marked distress, urine was negative, tonsils are diseased and large, menses absent since January last. There was a bloody watery discharge which had been present for four weeks past, pelvic examination revealed a large hard tumor mass which filled the pelvis and extended to the navel.

The uterus was moderately enlarged, was crowded up above the pubes and a small polypus extended out from the cervix.

The vagina and all parts were very blue, no fetal heart nor bruit could be heard, nor had she felt motion at any time. The breasts were large and contained milk.

The x-ray revealed a child present. She returned home under the care of Dr. Dewire and I am indebted to him for the following report.

Patient was taken seriously ill on May 27 and Dr. Dewire summoned; complains of aching over body, throat dry and feverish. Temperature 101 F. plus 120 and weak. Some cough and expectoration. Some small liquid bowel movements and very frequent pains of griping nature, very restless. Anodynes and antipyretics given and hot applications applied to abdomen. June 1, patient weaker, still coughing, breathing labored, abdomen tympanic and tender, pulse rapid, temperature 102, respiration 45, pulse 120. June second, Dr. Nuzum in consultation, pelvis full, vagina and cervix blue, mass in back of womb, and motion of child felt in it. Uterus not palpable because of distention. Patient put in knee chest position and gravity helped to relieve pressure in pelvis. This position maintained from ten to twenty minutes every four hours. June 6, Dr. Nuzum saw her again.

mass higher in abdomen, womb plainly palpable, anterior to mass and empty. Congestion a little better, but patient growing weaker. Peritonitis subsiding. Lips and extremities purple, circulation poor, but no heart audible. Feet and ankles became edematous and patient died on morning of June 7. Autopsy at request of family at 2 p. m. A woman somewhat thin, with well formed and filled breasts, abdomen rounded like six months' pregnancy. Opening in median line. Great mass back of womb, dark blue, full of fluid and containing placenta adherent to everything. Intestines matted, placenta of normal size for six months, attached to intestines, tube obliterated or stretched beyond recognition, transverse and descending colon full of hard feces. Left tube occluded and full of pus.

Girl baby, normal for six months, weight two pounds and eight ounces. Length of body and head $10\frac{1}{2}$ inches, circumference of head 9 inches, of chest $9\frac{1}{2}$ inches. Hair on head about one-half inch long and brownish color, nails imperfect. No deformities of arms or limbs.

Child a little thin but fairly plump for mother's condition. Autopsy by Dr. T. W. Nuzum, report by Dr. Dewire.

RACHICENTESIS OR SPINAL DRAINAGE IN CONVULSIONS*

J. A. ST. ONGE, M.D., Sioux City

The scarcity of literature in the treatment relative to some forms of convulsions has prompted the writer to prepare this short paper to convey the impression that spinal puncture and drainage may be found applicable in certain types of cases where as yet a diagnosis is unobtainable, due to an obscure or unknown etiology, where the urgency of the case demands some definite and active mode of treatment, something readily accessible, simple, safe and still within the average medical skill of the men in the profession.

As an excuse for further discussion, and to bring forth more clearly in this paper the evidences which lead us to believe in the application of this procedure, I wish briefly to review what is known of the origin and probable use of the spinal fluid. As to its origin, it is probably derived from the choroid plexus vessels modified by the pia mater membranes, lining the ventricles. It seems to have an independent circulation of its own, and it does not have the characteristics of a secreting or ordinary transudate, but it is a natural dialysate very closely connected with the brain venous circulation so we can assume that it conforms to the venous pressure in the brain. Here let me repeat verbatim an extract from an

article as it appeared in the "Journal of Medical Research" in 1914, by Lewis H. Weed. Paul Wegefardth in the "Surgical Laboratory" at Harvard; and also a note by Mestrezat of Paris. Granting that the choroid plexuses with the velum interpositum, which is a prolongation of the pia mater into the interior brain through the middle part of the transverse fissure, having for its relation the optic thalamus, corpus callosum, corpora quadrigemina, pineal glands are the chief sources of the cerebrospinal fluid, is the process a mere dialysation from the blood?

What conditions activate and what conditions inhibit these chorioidal glands? Have they an internal as well as an external secretion? To what primary diseases are they subject? How early in embryonal life do they secrete? Why does the fluid which they elaborate differ so greatly from that secreted by most other glands? Why are the cells so impermeable to the passage from the blood stream of drugs and of substances such as bile pigments which in conditions of jaundice quickly stain all other body tissues and fluids?

Granting that the fluid thus secreted by the choroid plexuses leaves the ventricles and spreads over the brain and down the cord in the subarachnoid spaces, does it receive accessions from elsewhere, from the ependyma or from pituitary or pineal glands? Are there lymph channels in the brain, and if not how does the central nervous system dispose of its products of tissue waste? If there are cerebral lymphatics, do they discharge into the subarachnoid spaces and is the subarachnoid fluid therefore of the same character chemically, physically and cytologically as the ventricular fluid? Why normally is the fluid practically limited to the subarachnoid spaces, and under what conditions does it become subdural?

Granting that fluid may escape by way of the Pacchionian granulations, is this the chief or only manner of escape? If an important avenue, why are these structures lacking in the lower animals and in the human infant? Are these granulations therefore pathological processes and if so what are their precursors? Are there other means of fluid absorption along the nerves by the way of the lymphatics, and if so how important are they? How do the spaces in the pia arachnoid develop and do the chorioidal glands mature and secrete before or after their formation? Are there faults of development at these meningeal outlets for fluid which can account for congenital cephalocele? Are there analogies in the fluid circulation of the eye to which we may

*Presented at the Sioux Valley Medical Association, Sioux Falls, South Dakota.

attribute the disturbances of the circulation of the intraocular fluid?

Weed by adopting the principle of injection of non-granular fluids from which granules might subsequently be precipitated, showed conclusively that the arachnoid villi represent the points of escape for fluid which by a process of seepage enter directly into the pachymeningeal sinuses. Mechanically it acts as a water pad to the brain, equalizing intracranial pressure and is a modifier of impressions and impulses.

The theory is advanced that the choroid plexus withholds harmful material and manufactures antigen for the protection of the nervous system against infection. Since the active principle of the pituitary bodies has been found in the cerebrospinal fluid it may also act as a distributor of these vital substances to the nervous system. The administration of thyroid substances diminishes its activity.

Cerebrospinal fluid being intimately related to the brain circulation, and it being the medium of exchange between blood and brain fluid, carrying dialysable substances to the brain centers which are susceptible at all times to irritation, and bearing in mind the state of stasis that exists where the circulation is at a low ebb, we can readily see the potentialities: first—when increased in amount from pressure; and second—when laden with toxic substances (acetone, lactic acid, red cells, albumin, ferments and urea) the role it may play in causing convulsions.

According to Sahli the normal pressure is 5 to 8 mm. of mercury. In amount, 15 to 30 c.c. in a child to 60 c.c. in an adult. If pressure is found above 10 mm. of mercury it is considered abnormal. Intracranial overtension is very clearly an increase either existing as an edema or as free fluid in the ventricular or arachnoid spaces; and we believe there is a direct relation between general arterial pressure and intracranial pressure. Pressure is increased from 3 to 12 per cent in certain brain pathological conditions, during and following most cases of convulsions.

Not wishing to deviate from the subject let me enumerate some of the conditions in which we may have convulsions. Namely: brain (cortex) injuries with or without fracture of the skull, cerebral hemorrhage and thrombosis, delirium, stupor, puerpural convulsions, status epilepticus, convulsive meningeal hemorrhage of the newborn. I might add to this list many more of the minor convulsions, but it would only serve to confuse the issue and lead you away from the subject. As this paper deals mostly with one phase of the treatment of convulsions, namely

that of spinal drainage.

The statement made above that intracranial pressure is in direct relation to general arterial pressure, does not always hold true, as in marked delirium and stupor there is a greatly increased intracranial pressure out of proportion to the general arterial pressure, explained probably through the selective cause of the existing coma. In treatment this exception to the rule may apply to certain cases where complete drainage is made and the results obtained may be a mild or a marked lowering of arterial pressure.

Increased intracranial pressure exist in many of the diseases of the brain and nervous system. In addition to this I shall mention nervous shock and shell concussion 80 per cent; and here besides having a hypersecretion of the cerebral fluid we have a further complicating element that is albumen (not normally present) which appears in two or three days and does not subside for weeks and months and may be present indefinitely.

It is true that many cases of sudden convulsions in apparently normal persons will show some definite organic lesions soon afterward diagnosed, be it uremia, coma, gumma or thrombosis. Again some cases resembling petit mal melancholia of subinvolution, persistent and severe headache, with clouding of consciousness will clear up to your surprise with the withdrawal of the spinal fluid.

The spinal canal is regarded by many as sacred ground and I wish to emphasize what I am about to say, "it should not be invaded as a matter of routine but when withdrawal of fluid is indicated for diagnostic procedure or in increased intracranial pressure no hesitancy should be felt in entering the canal."

Pike, under the direction of Dr. J. Allen Jackson, superintendent of the State Hospital for the Insane in Danville, Pennsylvania, has reported in the *Journal A. M. A.*, December 4, 1920, that in more than 1000 cases where lumbar puncture was performed no death has occurred. Most of you are familiar with the quite sedative influence incident to the removal of fluid in meningitis for diagnoses and you all agree that it is a rational mode of treatment. Why not broaden the scope of this useful procedure and apply it with discretion in convulsions (here I wish to mention puerpural convulsions). Drain the fluid completely once in twenty-four hours two or three times. Pressure results being your guide. Lumbar puncture as first proposed by Quincke in 1891 for the removal of cerebrospinal fluid has both diagnostic and therapeutic value.

The Journal of the Iowa State Medical Society

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The Tri-State District Medical Association An Appreciation

THE TRI-STATE DISTRICT MEDICAL ASSOCIATION has seen fit to confer on the profession of Iowa in general, and on the profession of Polk County in particular, the honor of holding the Seventh Annual Meeting in Des Moines.

Since the meeting in Peoria last fall, the cohorts of the Association have been at work planning on ways and means of bettering the medical profession of the great Middle West. Through the officiating and advisory of the Association, a trip through the principal medical centers of the East was definitely planned last year, and thanks to the untiring efforts of the Managing Director, Dr. W. B. Peck, of Freeport, such a trip was brought to a happy fruition in April. To those who were privileged the pleasure of enjoying the hospitality extended by the profession to its vis-

itors during that memorable trip, no words of explanation are needed. It was simply hospitality *de luxe* from start to finish.

Now this great Association, though yet in its infancy, in its endeavor to extend its usefulness to the medical men out on the firing line, is bringing to Des Moines any array of medical talent that is unsurpassed. The guests of the Association are men of national and international reputation. They represent and stand for the best known to medical science in this country and Canada. Some sacrifice on their part in laying aside pressing duties at home, whether in practice or in the college, must needs result; and to these men who have so willingly, so ungrudgingly, manifested their interest in helping to spread the gospel of medical missions by accepting the invitation to come to Iowa, our sincere thanks is hereby gratefully extended.

Esteemed guests, your coming is anticipated with unbounded pleasure; your going will leave behind a memory never to be forgotten as long as the mind remains green. May you take back to your respective localities, wherever they may be, some of the spirit of friendliness, of good fellowship, which prevails throughout this section of the country and which is as indigenous to the Midwest as are patriotic traditions to the East. To you, leaders of the profession, we look for help and guidance, and in return for your efforts, you may rest assured that an appreciative and attentive audience will greet each and every one no matter how early or how late the hour may be.

POLK COUNTY MEDICAL SOCIETY.

HOYT SHERMAN PLACE—DES MOINES WOMEN'S CLUB HOME

Meeting Place Tri-State District Medical Association

The Des Moines Women's Club Home and art galleries, the pioneer home of Hoyt Sherman (brother of Gen. Wm. Tecumseh Sherman), Fifteenth and Woodland Ave., with its new up-to-date auditorium having a seating capacity of 1450, all combined in one architecturally correct structure, will be the meeting place of all sessions and clinics of the Tri-State District Medical Association.

This Club Home, which is the headquarters of the Women's Club, the Music and Little Theatre activities of the city, was built by the Des Moines Women's Club, having a membership of 1600 members, at a cost of \$140,000, with an additional expenditure of \$40,000 for furnishings.



HOYT SHERMAN PLACE

TRI-STATE DISTRICT MEDICAL ASSOCIATION ANNUAL ASSEMBLY

An Inter-State Post-Graduate Meeting Des Moines, Iowa, October 29, 30, 31 and November 1, 1923

PROGRAM

All sessions of the General Meeting and Clinics held at the new Des Moines Women's Club Auditorium, Hoyt Sherman Place.

Headquarters—Fort Des Moines Hotel.

FIRST DAY

Monday, October 29

7 a. m.

1. Diagnostic Clinic (Medical). Heart failure, cardiac decompensation of any type. Dr. G. Canby Robinson, Dean and Professor of Medicine Vanderbilt University Medical School, Nashville, Tennessee.

2. Diagnostic Clinic (Surgical). Thoracic and abdominal cases. Dr. Evarts A. Graham, Professor of Surgery, Washington University, Medical School, St. Louis, Missouri.

3. Diagnostic Clinic (Medical). Dr. James B. Herrick, Prof. of Medicine, Rush Medical College, School of Medicine, Chicago, Illinois.

Intermission—Review Exhibits

4. Diagnostic Clinic (Surgical). Fracture cases. Dr. Frederick J. Cotton, Associate in Surgery, Harvard University, School of Medicine, Boston, Massachusetts.

5. Diagnostic Clinic (Surgical). Stomach, gall-bladder and other abdominal cases. Dr. John B. Deaver, Prof. of Surgery, University of Pennsylvania, School of Medicine, Philadelphia, Pennsylvania.

Afternoon

1 p. m.

6. Diagnostic Clinic (Urological). Dr. W. F. Braasch, Prof. of Urology, University of Minnesota Graduate School of Medicine (Mayo Clinic), Rochester, Minnesota.

7. Diagnostic Clinic (Medical). Dr. Charles P. Emerson, Dean and Prof. of Medicine, University of Indiana, School of Medicine, Indianapolis, Indiana.

8. Diagnostic Clinic (Surgical). Dr. Frederick Atwood Besley, Prof. of Surgery, Northwestern University, School of Medicine, Chicago, Illinois.

9. Diagnostic Clinic (Surgical). Abdominal cases, gall-bladder, ulcer, malignancies of colon or cecum. Dr. John F. Erdmann, Prof. of Surgery, New York Post-Graduate School of Medicine, New York, N. Y.

10. Symposium, Northwestern University, Medical Department. Supervised by Dr. Frederick Atwood Besley, Prof. of Surgery, Northwestern University, Medical School, Chicago, Illinois.

11. "The Mystery of the Abdomen." Dr. John B. Deaver, Prof. of Surgery, University of Pennsylvania, School of Medicine, Philadelphia, Pennsylvania.

Intermission—Review Exhibits

12. "The Relation of the Circulation and Respiration." Dr. G. Canby Robinson, Dean and Professor of Medicine Vanderbilt University Medical School, Nashville, Tennessee.

13. "Operative Treatment on Fractures, Old and New." Dr. Frederick J. Cotton, Associate in Surgery, Harvard University, School of Medicine, Boston, Massachusetts.

14. "Purpura Hemorrhagica." Dr. H. C. Giffin, Mayo Clinic, Rochester, Minnesota.

15. Symposium, University of Indiana, Medical Department. Supervised by Dr. Charles P. Emerson, Dean and Prof. of Medicine, Indianapolis, Indiana.

16. "The Present State of Arthroplasties." Dr. William S. Baer, Associate Prof. of Orthopedic Surgery, Johns Hopkins University, School of Medicine, Baltimore, Maryland.

Evening

7 p. m.

17. Symposium, University of Iowa, Medical Department. Supervised by Dr. Campbell P. Howard, Prof. of Medicine, Iowa City, Iowa. "Visceral Syphilis."

"Incidence of Visceral Syphilis in Iowa, with Especial Reference to its Thoracic Manifestations," Dr. Campbell P. Howard, Prof. of Medicine.

"Syphilis of the Digestive Organs." Dr. Wesley E. Gatewood.

"Syphilis of the Nervous System." Dr. Clarence E. Van Epps, Prof. of Therapeutics.

"Prognosis and Treatment of Visceral Syphilis." Dr. Frank J. Rohner, Assistant Prof. of Medicine.

18. "The Diagnosis and Treatment of Chronic Suppuration of the Lung." Dr. Evarts A. Graham, Prof. of Surgery, Washington University, Medical School, St. Louis, Missouri.

19. "Practical Points Concerning Diagnosis and Treatment of Heart Disease." Dr. James B. Herrick, Prof. of Medicine, Rush Medical College, School of Medicine, Chicago, Illinois.

20. "What Progress Are We Making in the Treatment of Cancer?" Dr. Byron B. Davis, Prof. of Clinical Surgery, University of Nebraska, College of Medicine, Omaha, Nebraska.

21. "The Early Stages of Chronic Bronchitis." Dr. Charles N. Meader, Dean and Prof. of Medicine, University of Colorado, School of Medicine, Denver, Colorado.

22. "Meeting the Surgical Indications of the Acute Abdomen by the Local Anesthesia Method." (Lantern slides.) Dr. Robert E. Farr, Minneapolis, Minnesota.

SECOND DAY

Tuesday, October 30

7 a. m.

1. Diagnostic Clinics (Orthopedic). Orthopedic cases. Dr. Fred H. Albee, Prof. of Orthopedic Surgery, New York Post-Graduate Medical School, New York, N. Y.

2. Diagnostic Clinics (Orthopedic). Joint diseases; sacroiliac strains. Dr. William S. Baer, Associate Prof. of Orthopedic Surgery, Johns Hopkins University, School of Medicine, Baltimore, Maryland.

3. Diagnostic Clinic (Medical). General medicine. Dr. William S. Thayer, Emeritus Prof. of Medicine, Johns Hopkins University, School of Medicine, Baltimore, Maryland.

4. Diagnostic Clinic (Medical). (a) kidney diseases, (nephritis or infectious); (b) blood diseases (anemia, leukemia, purpura); (c) obscure eye cases (choroiditis, uveitis, etc.). Dr. Oliver H. Pepper, Assistant Prof. of Medicine, University of Pennsylvania, School of Medicine, Philadelphia, Pennsylvania.

Intermission—Review Exhibits

5. Diagnostic Clinic (Surgical). Abdominal, bone and nerve injury cases. Dr. Dean Lewis, Prof. of Surgery, Rush Medical College, Chicago, Illinois.

6. Diagnostic Clinic (Dermatology). Skin diseases. Dr. Frank C. Knowles, Prof. of Dermatology, Jefferson Medical College, Philadelphia, Pennsylvania.

7. Diagnostic Clinic (Surgical). Diseases of the thyroid; goitre cases. Dr. Charles H. Mayo, Mayo Clinic, Rochester, Minnesota.

Afternoon

1 p. m.

8. Diagnostic Clinic (Diabetes). The Treatment of Diabetes Mellitus. Dr. Elliott P. Joslin, Prof. of Clinical Medicine, Harvard University, School of Medicine, Boston, Massachusetts.

9. Symposium, University of Chicago (Rush). Supervised by Dr. Dean Lewis, Prof. of Surgery. "Infections."

"General Infections and Treatment." Dr. Dallas B. Phemister, Assistant Prof. of Surgery.

"Infections in Diabetic Cases." Dr. Vernon C. David, Assistant Prof. of Surgery.

"Chronic Surgical Infections." Dr. Arthur Dean Bevan, Head of Department of Surgery.

"Blood Findings in General Infections." Dr. George F. Dick, Assistant Prof. of Medicine.

"Infections of Gastro-Intestinal Tract." Dr. Clifford G. Grulee, Associate Prof. of Medicine (Ped.).

10. Subject later. Dr. Edward William Archibald, Associate Prof. of Clinical Surgery, McGill University, Montreal, Canada.

11. "Tumors of the Breast." Dr. John F. Erdman, Prof. of Surgery, New York Post-Graduate School of Medicine, New York, N. Y.

Intermission—Review Exhibits

12. "The Symptoms of Nephritis, Their Bearing on Treatment." Dr. Oliver H. Pepper, Assistant Prof. of Medicine, University of Pennsylvania, School of Medicine, Philadelphia, Pennsylvania.

13. "Insulin and the General Practitioner." Dr. Elliott P. Joslin, Prof. of Clinical Medicine, Harvard University, School of Medicine, Boston, Massachusetts.

14. "The Surgical Treatment of Ulcer of the Duodenum and Stomach." Dr. Charles H. Mayo, Mayo Clinic, Rochester, Minnesota.

15. Subject later. Dr. William S. Thayer, Emeritus Prof. of Medicine, Johns Hopkins University, School of Medicine, Baltimore, Maryland.

16. Symposium "Diabetes."

Dr. Elliott P. Joslin, Prof. of Clinical Medicine, Harvard University, School of Medicine, Boston, Massachusetts.

Dr. Louis H. Newburgh, Ann Arbor, Michigan.

Dr. Roland Turner Woodyatt, Associate Prof. of Medicine, Rush Medical College, Chicago, Illinois.

Evening

7 p. m.

17. "Conclusions Drawn from a Series of 260 Cases of Gangrenous Appendicitis." Dr. Willis D. Gatch, Prof. of Surgery, Indiana University, School of Medicine, Indianapolis, Indiana.

18. Symposium "Fractures."

"Potts Fracture and Fracture of the Tarsal Bones." Dr. William S. Baer, Associate Prof. of Orthopedic Surgery, Johns Hopkins University, School of Medicine, Baltimore, Maryland.

"Fractures of the Shoulder and Hip Joints." Dr. Frederick J. Cotton, Associate in Surgery, Harvard University, School of Medicine, Boston, Massachusetts.

"The Role of the Periosteum in the Repair of Fractures." Dr. Leonard W. Ely, Associate Prof. of Orthopedic Surgery, Stanford University, School of Medicine, San Francisco, California.

"Complication of Fractures." Dr. Dean Lewis, Prof. of Surgery, Rush Medical College, School of Medicine, Chicago, Illinois.

"Colles' Fracture and Fracture of the Carpal Bones." Dr. Kellogg Speed, Assistant Prof. of Surgery, Rush Medical College, Chicago, Illinois.

"Operative Treatment of Recent Fractures and Non-Unions." Dr. Hugh H. Trout, Roanoke, Virginia.

19. "The Relationship between Dermatology and Internal Medicine." Dr. Frank C. Knowles, Prof. of Dermatology, Jefferson Medical College, Philadelphia, Pennsylvania.

20. "Reconstruction Surgery." Dr. Fred H. Albee, Prof. of Orthopedic Surgery, New York Post-Graduate Medical School, New York, N. Y.

THIRD DAY

Wednesday, October 31

7 a. m.

1. Diagnostic Clinic (Neurosurgical). Trigeminal neuralgia, typical and atypical. Dr. Charles H. Frazier, Prof. of Neurosurgery, University of Pennsylvania, School of Medicine, Philadelphia, Pennsylvania.

2. Diagnostic Clinic (Neurosurgical). Pituitary: acromeglic or Frohlich type; brain tumor. Dr. Ernest Sachs, Prof. of Clinical Neurosurgery, Washington University, School of Medicine, St. Louis, Missouri.

3. Diagnostic Clinic (Medical). Pernicious anemia. Dr. Charles F. Martin, Prof. of Medicine, McGill University, Faculty of Medicine, Montreal, Canada.

Intermission—Review Exhibits

4. Diagnostic Clinic (Surgical). (a) female children with chronic pyelitis (b) kidney infection (tubercular or otherwise); (c) genital tuberculosis with lesions of the epididymis; (d) gastric ulcer, lesions of the gall-bladder; (e) fracture of the femur. Dr. Hugh Cabot, Dean and Prof. of Surgery, University of Michigan, Medical School, Ann Arbor, Michigan.

5. Diagnostic Clinic (Medical). Pneumonia, lobar and broncho. Dr. Francis G. Blake, Prof. of Medicine, Yale University, School of Medicine, New Haven, Connecticut.

6. Diagnostic Clinic (Surgical). Ulcer stomach, duodenum; cancer, stomach, duodenum; gall-bladder diseases. Dr. George W. Crile, Prof. of Surgery, Western Reserve University, School of Medicine, Cleveland, Ohio.

Afternoon

1 p. m.

7. Diagnostic Clinic (Surgical). Dr. Edward William Archibald, Associate Prof. of Clinical Surgery, University of McGill, Montreal, Canada.

8. Diagnostic Clinic (Surgical). Lesions biliary tract, pancreas, spleen, colon, rectum. Dr. Allen Whipple, Prof. of Surgery, Columbia University, College of Physicians and Surgeons, New York, N. Y.

9. Symposium and other contributions by Staff, Medical Department, University of Wisconsin.

"The Development of New Arsenicals in the Treatment of Neurosyphilis." Dr. A. S. Loevenhart, Prof. of Pharmacology, University of Wisconsin.
Dr. W. F. Lorenz, Prof. of Neurophysiology, University of Wisconsin, Director of Wisconsin Psychiatric Institute.

"The Surgery of Spastic Paralysis." Dr. Frederick J. Gaenslen, Orthopedic Surgeon to the Wisconsin General Hospital at the University of Wisconsin.

"Lymphoid Resistance and Susceptibility." Dr. C. H. Bunting, Prof. of Pathology, University of Wisconsin.

"The Surgery of Cleft Palate with Special Reference to a New Method of Treatment." Dr. George V. I. Brown, Plastic Surgeon to the Wisconsin General Hospital at the University of Wisconsin.

10. "Arterial Hypertension; its Management and its Significance." Dr. William A. Jenkins, Prof. of Medicine and Clinical Medicine, University of Louisville, Medical Department, Louisville, Kentucky.

Intermission—Review Exhibits

11. "The Life History of Brain Tumors with Observations as to Their Localization and Treatment." Dr. Charles H. Frazier, Prof. of Neurosurgery, University of Pennsylvania, School of Medicine, Philadelphia, Pennsylvania.

12. "Cardiac Sufficiency." Dr. Charles F. Martin, Prof. of Medicine, McGill University, Faculty of Medicine, Montreal, Canada.

13. "Differentiation between the Quick and the Dead." Dr. George W. Crile, Prof. of Surgery, Western Reserve University, School of Medicine, Cleveland, Ohio.

14. "Observations on Pneumonia." Dr. Francis G. Blake, Prof. of Medicine, Yale University, School of Medicine, New Haven, Connecticut.

Evening

7 p. m.

15. Symposium, Western Reserve University (Crile Clinic), Cleveland, Ohio. "The General Roles of Surgery, the X-rays and Radium in the Treatment of Benign and Malignant Tumors of the Uterus." Surgical side by Dr. George W. Crile.

X-ray Therapy by Dr. U. V. Portmann.
Radium Therapy by Dr. T. E. Jones.

16. "The Factor of 'Coincidence' in Surgery." Dr. Leonard Freeman, Prof. of Surgery, University of Colorado, School of Medicine, Denver, Colorado.

17. "Certain Factors in the Differential Diagnosis of Non-acute Surgical Lesions of the Stomach, Biliary Tract and Appendix." Dr. Allen Whipple, Prof. of Surgery, Columbia University, College of Physicians and Surgeons, New York, N. Y.

18. Symposium, University of Michigan, Medical Department. "Nephritis."

"The Etiology of Nephritis." Dr. L. H. Newburgh.
"The Pathology of Renal Diseases." Dr. A. S. Warthin.

"Infections of the Kidney other than Tubercular." Dr. Hugh Cabot.

19. "Some of the More Common Neurosurgical Conditions." Dr. Ernest Sachs, Prof. of Clinical Neurosurgery, Washington University, School of Medicine, St. Louis, Missouri.

Smoker

FOURTH DAY

Thursday, November 1

7 a. m.

1. Diagnostic Clinic (Pediatrics). Infants suffering from nutritional disturbances, diarrhea and feeding difficulties. Dr. William McKim Marriott, Prof. of Pediatrics, Washington University, School of Medicine, St. Louis, Missouri.

2. Diagnostic Clinic (Surgical). Fractures, cases of osteomyelitis, bone tumors, various joint lesions, traumatic peripheral nerve lesions and other general surgical conditions of the extremities. Dr. Clarence L. Starr, Prof. of Surgery, University of Toronto, Faculty of Medicine, Toronto, Canada.

4. Diagnostic Clinic (Medical). Cases of urethritis, prostatitis, hematuria (various types), tuberculosis of urinary or seminal tract along with lantern slides bringing out points in diagnosis and treatment. Dr. Hugh H. Young, Clinical Prof. of Urology, Johns Hopkins University, Baltimore, Maryland.

Intermission—Review Exhibits

4. Diagnostic Clinic (Medical). Heart and lung cases. Dr. Frank Billings, Prof. of Medicine, Rush Medical College, School of Medicine, Chicago, Illinois.

5. Diagnostic Clinic (Surgical). Some medical and surgical aspects of diseases of the biliary apparatus, including gall-stone disease, carcinoma, chronic pancreatitis and all those conditions which result in infections of the biliary passages, jaundice, etc. Dr. William J. Mayo, Mayo Clinic, Rochester, Minnesota.

Afternoon**1 p. m.**

6. Symposium, University of Minnesota Post Graduate School of Medicine (Mayo Clinic), "Diseases of the Thyroid."

"Significance of the Clinical and Pathological Findings in Conditions Associated with Abnormal Thyroid Functions." Dr. Henry S. Plummer, Prof. of Medicine.

"Practical Value of Basal Metabolism Estimations in the Management of Diseases of the Thyroid." Dr. Walter M. Boothby, Assistant Prof. of Medicine.

"Surgery of the Thyroid and its Mortality." Dr. John DeJ. Pemberton, Prof. of Surgery.

7. Remarks on the Diagnosis and Treatment of Various Diseases of the Prostate." (lantern slides). Dr. Hugh H. Young, Clinical Prof. of Urology, Johns Hopkins University, Baltimore, Maryland.

8. "Some Practical Points in Infant Feeding." Dr. William McKim Marriott, Prof. of Pediatrics, Washington University, School of Medicine, St. Louis, Missouri.

9. "Biophysics as an Approach to Scientific Medicine of the Future." Dr. William J. Mayo, Mayo Clinic, Rochester, Minnesota.

Intermission—Review Exhibits

10. "The Treatment of Compound Fractures." Dr. Clarence L. Starr, Prof. of Surgery, University of Toronto, Faculty of Medicine, Toronto, Canada.

11. "The Present Situation in the Treatment of Syphilis." Dr. William Allen Pusey, Emeritus Prof. of Dermatology, University of Illinois, School of Medicine, Chicago, Illinois. President-Elect American Medical Association.

12. "The Fashioning of the English Speaking Peoples." Sir Robert Falconer, President of University of Toronto, Toronto, Canada.

13. Foreign Guests—

Sir William I. DeCourcy Wheeler, President of the Royal College of Surgeons of Ireland, Dublin.

Mr. Arthur E. Webb-Johnson, C. B. E., D. S. O., F. R. C. S., The Middlesex Hospital Medical School, London, England.

BANQUET**7 p. m.****Addresses:**

Sir Robert Falconer, President of University of Toronto, Toronto, Canada.

Sir William DeCourcy Wheeler, President of Royal College of Surgeons of Ireland, Dublin.

Dr. Ray Lyman Wilbur, President of Leland Stanford University and President of American Medical Association, Stanford University, California.

Dr. Charles F. Martin, Dean and Prof. of Medicine, McGill University, Faculty of Medicine, Montreal, Canada.

Honorable Albert B. Cummins, United States Senator, Washington, D. C.

Honorable Nathan E. Kendall, Governor of Iowa, Des Moines, Iowa.

Other distinguished citizens.

Note: If possible, Dr. Paul D. White, Massachusetts General Hospital, will conduct a heart clinic sometime during the meeting. Also, if possible, Dr. Leonard W. Ely, Stanford University, School of Medicine, will give an address, "The Second Great Type of Chronic Arthritis."

Officers of the Tri-State District Medical Association

President of Clinics, Dr. William J. Mayo, Rochester, Minnesota.

Honorary President, Dr. James R. Guthrie, Dubuque, Iowa.

President, Dr. Horace M. Brown, Milwaukee, Wisconsin.

President-Elect, Dr. Clifford U. Collins, Peoria, Illinois.

Vice-President, Wisconsin, Dr. Joseph S. Evans, Madison, Wisconsin.

Vice-President, Illinois, Dr. Edwin P. Sloan, Bloomington, Illinois.

Vice-President, Iowa, Dr. Frank M. Fuller, Keokuk, Iowa.

Managing Director, Dr. William B. Peck, Freeport, Illinois.

Temporary Associate Managing Director, Dr. J. Sheldon Clark, Freeport, Illinois.

Temporary Secretary, Dr. Edwin Henes, Jr., Milwaukee, Wisconsin.

Program Committee

Dr. Dean Lewis, Chicago, Illinois.

Dr. E. Starr Judd, Rochester, Minnesota.

Dr. John L. Yates, Milwaukee, Wisconsin.

Dr. Walter L. Bierring, Des Moines, Iowa.

Dr. Horace M. Brown, President, Milwaukee, Wisconsin.

Dr. William B. Peck, Managing-Director, Freeport, Illinois.

Dr. Edwin Henes, Jr., Secretary, Milwaukee, Wisconsin.

HOTEL RESERVATIONS

Physicians who are contemplating attending the Clinics of the Tri-State District Medical Association, should make their hotel reservations now. This can be done by communicating directly with the management of the hotels or by communicating with the Committee on Hotel Arrangements, Dr. F. R. Holbrook, Chairman, Bankers Trust Building, Des Moines.

SCHEDULE OF RATES DES MOINES HOTELS

NAME	Without Bath Per room Two persons	With Bath Per room Two persons	For each additional occupant
Brown Hotel Fourth and Chestnut	\$3.00—\$2.50	\$4.50—\$4.00	\$1.00—\$1.50
Chamberlain Hotel Seventh and Locust	3.00— 3.50	4.00— 6.00	1.50— 2.00
Elliott Hotel 219 Fourth Street	2.00— 2.50	3.00— 4.00	1.00— 1.50
Hotel Fort Des Moines Tenth and Walnut		5.00— 8.50	2.00
Foster Hotel Eighth and Walnut	2.00— 2.50	2.50— 3.50	1.00
Franklin Hotel Fifth and Locust		3.00— 5.00	1.00— 2.00
Irwin Hotel Sixth and Cherry	2.25	2.50— 4.00	1.00— 1.50
Kirkwood Hotel Fourth and Walnut	2.00— 3.00	3.50— 4.00	1.50— 2.00
Lloyd Hotel Sixth and High	2.00	3.50	1.00
Manhattan Hotel 313 Fifth Street	2.50	4.00	
Martin Hotel Third and Locust	2.00— 2.50	3.50— 4.00	1.25
Northwestern Hotel E. Fourth and Walnut	2.00— 2.50	3.00— 4.00	
Randolph Hotel Fourth and Court Ave.	2.50— 2.75	3.00— 4.00	1.00— 2.00
Rogers Hotel Sixth and Mulberry	2.00— 2.50	2.50— 3.50	1.00
Hotel Savery III Fourth and Locust		4.00— 9.00	2.00

IOWA STATE UNIVERSITY NEWS NOTES

Don M. Griswold, M.D.

Miss Buelah Crawford has resigned her position as educational director of the school of nursing at the Iowa State University Hospital, and will go to Syracuse, New York, where she has accepted the position as superintendent of nurses and director of the University School of Nursing at the Syracuse University.

Dr. Henry J. Prentiss and Dr. C. J. Rowan have just returned from a vacation in Canada.

Dr. Plant and Dr. McClintock had a very enjoyable time on their vacation at the lakes in Wisconsin.

Labor Day was celebrated at Oakdale, the Iowa State Tuberculosis Sanitarium, by many interesting events. A. T. Rowe and Don Hunter gave aeroplane flights and stunt demonstrations. Music was furnished by the D.O.K.K. band of Cedar Rapids.

IGNORANCE OF THE LAW EXCUSES NO MAN

Any physician expecting to attend the coming meeting of the Tri-State District Medical Association to be held at Des Moines October 29, 30, 31 and November 1, will do well to make sure that his dues have been paid to and receipted for by the Secretary of his State Medical Society before making a pilgrimage to the temporary shrine of medical knowledge. In so doing, he will save himself embarrassment and disappointment as only members of a state society belonging to the constituent state organizations of the American Medical Association are eligible, and on a basis of such membership, will physicians be admitted. Loss of time and avoidance of confusion will result if membership cards are presented at the registration desk. So take heed and govern yourself accordingly.

SOCIETY PROCEEDINGS

Fayette County Medical Society

The Fayette County Medical Society, which was organized in Wadena fifty-five years ago, had never met in this town again until recently, although it had maintained an organization through all those years. The society's meetings had been held in West Union, Donnan, and Oelwein until the idea was adopted at the last previous meeting to go to different towns upon invitation, and in behalf of Wadena Dr. Hall extended the invitation to come there on August 3, which was accepted. The gathering was large and very enjoyable. It was stated that probably never again in the fifty-five years had there been so many as five doctors present in Wadena at any one time.

About fifty-five years ago a resident of this community met with an accident which necessitated the amputation of an arm. Five of Fayette county's prominent physicians were in attendance and remained through the night with their patient. During their watch they decided to organize a county medical society, which they proceeded to do.

The meeting was at the home of Dr. and Mrs. Wood. The following members were present: Dr. J. M. Smittle, Waucoma; Dr. T. N. Walsh, Hawkeye; Dr. G. D. Darnall, West Union; Dr. C. D. Mercer, West Union; Dr. T. A. King, West Union; Dr. B. A. Hall, Maynard; Dr. C. C. Hall, Maynard; Dr. T. P. Leehy, Oelwein; Dr. D. M. Pattison, Oelwein; Dr. H. Risk, Oelwein; Dr. E. E. Krider, Oelwein; Dr. G. N. Wassom, Oelwein; Dr. J. B. O'Connor, Oelwein; Dr. D. W. Ward, Oelwein; Dr. Smith-Kennedy, Oelwein; Dr. C. D. Bothwell, Oelwein; Dr. I. D. Jerdee, Clermont, Dr. and Mrs. S. C. Ainsworth of Volga and Mrs. E. E. Krider of Oelwein were guests.

Dr. West of Waverly gave an illustrated lecture on diseases of the kidneys. Dr. Bothwell talked on the x-ray, and Dr. T. N. Walsh on tuberculosis.

Hardin County Medical Society

The mid-summer meeting of the Hardin County Medical Society was held at Alden July 19, opening at 2:00 o'clock in the afternoon. The following interesting program was presented:

Headache-Relation Migrain Bears to Gastro-Intestinal, Dr. C. S. McVicar, Rochester, Minnesota.

Scarlet Fever-Electric Wringer (Surgical), Dr. F. S. Hough, Sibley.

Lingual Tonsil, Dr. J. C. Powers, Hampton.

Van Buren County Medical Society

The fifth annual picnic meeting of the Van Buren County Medical Society was held at Anderson park on Des Moines river near Keosauqua.

Anderson Park is on primary road no. 11, about half way between Mt. Zion and Keosauqua. As this is a private park, a charge of 10c per capita and 10c for automobiles is made. This was an ideal place for a picnic. Good boating and bathing beach.

The dinner served at 12:30 sharp, was of the regular picnic style. Hot coffee was furnished.

Program—The Pregnant Woman—Antenatal Care, Dr. J. S. Gaumer, Fairfield; Paper, Dr. F. A. Hecker, Ottumwa; Modern Treatment of Diabetes, Dr. J. D. Boyd, Iowa City; Para-Nasal Sinusitis—Causes and Treatment, Dr. C. B. Taylor, Ottumwa; A Few Therapeutic Hints, Dr. R. N. Cresap, Bonaparte.

C. R. Russell, Sec'y.

Sioux Valley Medical Association

Sioux Valley Medical Association met at Sioux Falls, South Dakota, July 12-13, 1923. Officers elected: President, Dr. L. L. Corcoran, Rock Rapids; vice-president, Dr. R. S. Westaby, Madison, South Dakota; vice-president, Dr. Sherman, Luverne, Minnesota; treasurer, Dr. R. M. Walters, Sioux City, Iowa; secretary, Dr. W. R. Brock, Sheldon.

Upper Des Moines Medical Society

The Upper Des Moines Medical Society held its mid-summer meeting at the West Okoboji Golf and Country Club on July 20. The day was excellent, and for the doctors, their wives and ladies, the time was deservedly well spent.

Dr. John Peck of Des Moines held a Tuberculosis Clinic during the forenoon and afternoon. Dr. Peck was assisted in the management of this clinic by Miss Blanche Eddy, county nurse for Dickinson county, and several nurses representing the Iowa Tuberculosis Association.

At 3:00 o'clock the regular session was held. Dr. James Hennessey of Emmetsburg read a paper on "Medical Practice." Dr. L. R. Woodward of Mason City read a paper on "Diphtheria." This was followed by the report of a case of a "Birth Injury, Congenital Dislocation of the Knee," by Dr. C. S. Shultz of Spirit Lake. Dr. Geo. M. Crabb of Mason City closed the program with a paper upon "Acute Intestinal Obstruction."

At 6:00 o'clock dinner was served in the club house to the doctors, their wives and ladies, after which Dr. Peck of Des Moines addressed the meeting upon "Tuberculosis, Its Diagnosis and Treatment."

Physicians from without the area of the Upper Des Moines Medical Association, who were present, were Doctors M. J. Kenefick, Algona; Geo. M. Crabb, Mason City; L. R. Woodward, Mason City; William McCreary, Whitlemore; Hartman, Algona.

Harold Brereton.

PERSONAL MENTION

Dr. William C. Behn, Dubuque, recently received from Poland the Cross of Valor for services during the Bolshevik uprising in 1920.

Dr. Behn also received the Order of the Eagle and a gold medal (San Salva) from the Serbian government for services in that country.—(J. A. M. A.)

Dr. L. A. Doyle, a graduate of the Medical School of the University of Minnesota, has located in Spencer.

Dr. L. A. Hopkins of Grinnell is about to move to Washington state.

Dr. and Mrs. R. C. Herrick of Humboldt sailed from New York City August 1, going to Norway, where they will visit Mrs. Herrick's childhood home. They will be gone two months and will visit in England, France, Germany and Belgium.

Dr. Ruml, Cedar Rapids, left July 30 for New York City from where he sailed Saturday, August 4, on the S. S. Franconia, accompanying his son, Dr. Beardsley Ruml on a two months' trip. Dr. Beardsley Ruml who is with the Laura Spelman Rockefeller Memorial, is going on a business trip, and invited his father to accompany him. They will go to London, Geneva, Czechoslovakia, Bayreuth, Constantinople. At Geneva they will attend the Peace Conference. They are booked to sail for home, September 28.

Dr. and Mrs. T. A. Minassian, Des Moines, have returned from a two weeks' motor trip to the Minnesota lakes.

Dr. A. A. Garside, has opened an office suite at 614 Kahl building, Davenport, where he will be engaged in the general practice of medicine.

Dr. William J. Thomson, Chicago, has decided to locate in Waterloo as an eye, ear, nose and throat specialist and has made arrangements with Mrs. Ira J. Magee to take over the equipment of the late Dr. Magee. Dr. Thomson will be associated with Drs. Alford, Bickley, Curry and Dunkelberg on the eighth floor of James Black building.

At a simple but impressive ceremony, Miss Miriam E. Chase, daughter of Dr. and Mrs. C. S. Chase of Iowa City, was united in marriage recently to Dr. Robert N. Larimer, also of Iowa City. The service was conducted by Bishop Longley of Des Moines, at the local Trinity Episcopal church, immediately following the morning service and in the presence

of members of the immediate family. The bishop was assisted by his son, Rev. Harry Sherman Longley, the present rector of the church, where the bride has been organist during the past year.

Dr. Harry W. Dahl, son of Mr. and Mrs. Nels Dahl, 2614 East Fourteenth street, Des Moines, has returned after a year spent at Rockefeller Institute at New York City. He is a graduate of the state university and expects to make his future home in Des Moines.

Dr. D. J. McCarthy recently had conferred upon him by the Serbian Government the Order of White Eagle, for distinguished service during the World War.

Dr. Bert Bahr, formerly of Grand Island, Nebraska, but now pathologist at the Cedar Valley Hospital here, has received word from Cincinnati of his appointment as a member of the National Hospitalization Committee.

Dr. R. Phil Parriott and Dr. Charles F. Smith are doing hospital and research work at Cleveland.

Dr. D. E. Hannan of Perry is taking post-graduate work at Toronto, Montreal and New York City.

Dr. F. B. Laffert, a graduate of Rush Medical College, will locate in Centerville and be associated with Dr. E. E. Heaton.

Dr. D. J. Townsend, the recognized progressive practitioner of Lohrville, is doing what his friends expected him to do, fit himself out to meet the emergencies of his profession. The editor surreptitiously employed a newspaper report unknown to the doctor for a modest write-up. "Dr. D. J. Townsend is now nicely settled in his new office building, the brick structure just south of the Wilson hotel, formerly owned by Kail and Read. The building has been remodeled and redecorated and gives the doctor one of the finest offices in this section of the state. The reception room has been furnished throughout with new rugs and furniture (purchased from Buffham, of course) and the consultation room, operating room and drug room are all furnished nicely and with much new equipment. This places his office on a par with any in the state, with the exception of x-ray equipment. The remodeling of this building is another decided improvement to the town."

HOSPITAL NOTES

The Iowa Methodist Hospital, Des Moines, has just completed the \$60,000 remodeling program.

Opening of the new building of the United States Veterans Hospital at Knoxville, will take place about November 1.

Miss Myrtle Dean, for the past year superintendent of the Atlantic Hospital, leaves for New York and sails from there on the 23rd of August for Constantinople, Turkey, where she will be instructor of nurses in the American Red Cross Hospital. Miss

Dean has resigned her position here and Miss Fay Lewis, who comes from Omaha, has been elected as superintendent of the hospital in her place.

The Morningside General Hospital which will be put into operation at 3509 Stone avenue, September 1, will be under the superintendency of Mrs. Dorothy Tiffany, a graduate of the Samaritan Hospital in 1903.

The new institution, which is non-sectarian and the eighth hospital to be established in Sioux City, is being sponsored by the Morningside Commercial Club. The following staff of physicians and surgeons and doctors of dental surgery has been selected so far: Dr. Charles Thompson, president; Dr. J. H. Darey, vice-president; Dr. A. N. Sloan, secretary and treasurer, and Dr. L. J. Townsend, Dr. George W. Koch, Dr. C. F. Berkstresser, Dr. S. E. Sibley, Dr. R. P. Harrington, Dr. W. E. Cody, Dr. John E. Ballachey, Dr. J. N. Warren, Dr. E. C. Howe, Dr. Donald E. Smith, Dr. S. H. Rogers, and Dr. N. J. Hvistendahl. Other associates are expected to be appointed later.

OBITUARY

Dr. Charles Bernard Rentz, a former resident of Iowa City and Oxford, passed away in the government sanitarium, at Springfield, Illinois, in his forty-sixth year.

He was born at Oxford, on July 1, 1878, and died July 31, 1923.

Dr. Rentz attended the high school there; and college, at Ames and Iowa University. He won his degree of doctor of medicine, at Rush Medical Institute, Chicago, after leaving Iowa University. He was married twenty-two years ago, last June, to Miss Eva Lloyd, and practiced thereafter, in Sanborn, Fort Pierre, South Dakota, and Rowley, Iowa.

In 1917, he enlisted in the regular army, and was sent from Wisconsin to France. There were sowed the seeds that ultimately cost him his life. He was gassed while in the service, and was honorably discharged, in 1919. In June, three years ago, he was married to Miss Ruth Miller of Cornell, Wisconsin, and one son, Donald Charles, who survives, was born to them. A brother, George Rentz, now of Koster, Indiana, also survives.

Dr. Martin was born in Greensburg, Indiana, May 13, 1843. He was the youngest of ten children. He spent his youthful days on a farm near Greensburg. At the age of eighteen he served with Company B, 52nd Indiana Infantry, in the Civil War, as hospital steward.

In 1875 he was graduated from the Indiana Medical College and in 1885 he was graduated from the College of Physicians and Surgeons of Chicago.

Upon his first arrival in Red Oak in 1869, Dr. Martin was associated in the medical profession with his brother, J. W. Martin until 1877 when he went to Deadwood, South Dakota. In 1880 he rep-

resented the Black Hills district in the first territorial legislature. He returned to Red Oak five years later where he continued his profession for twenty-six years.

Following the death of his first wife, Dr. Martin was united in marriage to Amanda M. Hughes in Red Oak in 1887.

In 1914 Mr. Martin retired from active medical practice and went to Yankton to make his home with his daughter until his death, August 10, 1923.

Dr. Harry Thomas Dunn died at the home of his parents near Stone City, August 4, 1923, of tuberculosis.

Dr. Dunn was a graduate from the Iowa University School of Medicine. After his graduation he served as an intern at the University Hospital and practiced at Doon, Iowa. A few months ago his health failing, he returned to his old homestead.

Dr. J. W. Barrett of Osage, a graduate of Hahnemann Medical College, Chicago, 1879, died at his home in Osage June 16, 1923.

Dr. Barrett was born in Troy, North Dakota, December 23, 1845. After several years of practice, located in Osage in 1891, where his son Dr. James W. Barrett of Independence, was born the same year.

Dr. E. H. Hazen, formerly of Des Moines, died at his home in Oakland, California, August 30, 1923, at 5:30 a. m. after a brief illness resulting from gallstones. He will be cremated and his remains brought to Davenport about November 1 for interment.

A biographical sketch will appear in the November Journal Iowa State Medical Society among Iowa pioneer physicians.

Dr. Arthur J. P. Peterson of Muscatine died at the Lutheran Old Peoples' Home, July 24, 1923.

Dr. Peterson was born in Copenhagen June 8, 1859.

Dr. Hartford Sweet of Brookfield died at the La Grange Sanitarium June 25, 1923.

Dr. Sweet was born at Mt. Etna, August 11, 1876. Graduated from the medical department of the University of Illinois in 1904 and practiced several years at Fontanelle.

The death of Dr. Herman M. Biggs will be felt as a distinct loss to the entire nation. The work he did belongs, not to New York alone, but to the whole country.

Dr. Biggs died June 28 at the age of sixty-three years. He was born in Trumansburg, Tompkins county, New York, September 29, 1859. Dr. Biggs graduated from Cornell University and from the Bellevue Hospital Medical College. He studied at the University of Berlin and the University of Greipwald, Germany. He was the first director of the Carnegie Laboratory and gave the first systematic teaching in bacteriology in this country. For sev-

eral years he was visiting physician at the Almshouse and Workhouse Hospitals and at the same time was pathologist at Bellevue and consulting physician of the Hospital for Contagious Diseases.

From 1901 to 1914 he was general medical officer of the New York City department of health, also at the same time he continued his work at Bellevue as professor of therapeutics and clinical medicine. As director of the first municipal bacteriological laboratory in the world, he introduced antitoxin into this country and directed the production of it in New York in 1895. Under his direction the system of tuberculosis clinics, the Otisville Sanitarium and the Riverside Hospital were established.

In January, 1914, after having three times declined the position, he was appointed state health commissioner, the position he occupied at death.

BOOK REVIEWS

THE MEDICAL CLINICS OF NORTH AMERICA

New York Number, November, 1922. W. B. Saunders Company.

The notice of this number appears somewhat late, but on account of the valuable contributions it contains, we will briefly note some of the papers and clinics it contains.

Dr. Frederick M. Allen presents two subjects for special consideration: Observations on the "Progressiveness of Diabetes" and on the "Treatment of Arterial Hypertension."

Dr. Leo Buerger gives a rather extensive discussion on "Renal Functional Tests and Their Value."

These contributions will fairly illustrate the value of the number as a whole.

THE INFANT AND YOUNG CHILD

Its Care and Feeding from Birth Until School Age. A Manual for Mothers, By John Lovett Morse, M.D., Edwin T. Wyman, M.D., and Louis Webb Hill, M.D., Harvard Medical School and Children's Hospital, Boston; 12 Mo. of 271 Pages Illustrated. W. B. Saunders Company, 1923; Cloth, \$1.75.

This is a very attractive book, and is intended for the young mother, not in the way of advising home treatment of sick children but how to care for them in the most intelligent manner. It takes up many important and interesting things the mother is anxious to know about.

The family physician can do well as the family advisor to place this book in the hands of the prospective mother, that she may have some advance knowledge of what the care of an infant and young child means. This book will in no degree serve as a substitute for the doctor's advice, but will be a daily help under the direction of the doctor.

The Journal of the Iowa State Medical Society

VOL. XIII

DES MOINES, IOWA, NOVEMBER 15, 1923

No. 11

THE DIAGNOSIS OF SOME SURGICAL CONDITIONS*

M. L. HARRIS, M.D., Chicago

I have selected this rather prosaic subject for the reason that experience shows that the percentage of error in the diagnosis of many of these conditions is still unreasonably large. The number of patients applying for relief from symptoms which still linger and for which they have already undergone one or more unsuccessful operations seems to be on the increase. The reason for the failure in the majority of these cases is traceable to errors in diagnosis. Errors in diagnosis are usually due to a failure to properly assemble and evaluate the evidence. The evidence is either overlooked, ignored, or not understood.

By evidence is meant any and everything in the way of symptoms, physical findings, laboratory tests, surroundings, etc., which may be elicited in connection with the case. There are three factors which underlie the making of a correct diagnosis. These are: 1. The ability on the part of the attendant to observe or recognize evidence. 2. A thorough knowledge of the pathological conditions which may give rise to the evidence observed. 3. The ability to correctly evaluate evidence. It requires no argument to convince one of the necessity of first collecting the data or evidence on which a conclusion or diagnosis can be based. But, after the evidence is collected, it is useless unless one is familiar with the pathological conditions which may give rise to the manifestations observed. The diagnosis, however, is not complete until the third factor, the correct evaluation of the evidence has been brought into action.

This third factor may also be defined as the recognition of the relation which exists between the evidence and the pathological conditions. In making a diagnosis one should proceed in a definite systematic manner. After collecting the

data which are to form the basis of the diagnosis, one should pass in mental review the various pathological conditions which may give rise to the findings and then co-relate the findings with the pathology. This last is an act of reasoning, or of logic, which is the determination of the necessary dependencies of things.

Mistakes in diagnoses are due to errors in one or more of these three factors. One fails to elicit the evidence, or is unfamiliar with the pathology, or erroneously evaluates some part of the evidence. Since we learn best from a careful study of cases that have been erroneously diagnosed, in which the reason for the errors can be made known, I shall analyze some of these cases and point out the cause of the failures.

Let us first consider the appendix. It is astonishing how many mistakes are made in the diagnosis of acute appendicitis, and it is interesting to know, too, that mistakes are seldom made when acute appendicitis is actually present, but the great majority of the mistakes are made in diagnosing other conditions as acute appendicitis. These mistakes are due, as a rule, to a failure to properly evaluate the evidence.

Symptoms referable to the abdomen are present which direct the attention to the region of the appendix. Acute inflammation of that organ is so very common that the conclusion is immediately reached that it is a case of appendicitis and, unfortunately, the error is too often recognized only after the operation has revealed that organ to be intact. As illustrating this point I may mention the case of a young man about thirty years of age who had a severe chill with a rapidly rising temperature to $103\frac{1}{2}^{\circ}$ to 104° , pain in the right side of the abdomen with muscular rigidity and a leucocyte count of 30,000. He was sent to my service in the hospital for immediate operation with a diagnosis of acute appendicitis. On careful examination the case was found to be one of acute pneumonia and not acute appendicitis. Pain referred to the right side of the abdomen with muscular rigidity is not uncommon in pneumonia and it was these two symptoms that had

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led to the diagnosis of acute appendicitis. As showing how common this error is, Adams and Berger in a recent article (*J. A. M. A.*, Vol. 79, page 1809) report that of a series of 145 cases of lobar pneumonia in children admitted to the hospital 25, or 17.6 per cent were either sent in or were admitted with a diagnosis of acute appendicitis. The percentage of errors of this kind is much greater in children than it is in adults, but the mistake in adults is much too common, and unfortunately some of these cases are operated on before a correct diagnosis is made. A normal appendix is found and the pneumonia which is subsequently recognized is attributed to the anesthetic. The error in these cases is due to a failure to correctly evaluate the symptoms. Pain in the right side of the abdomen with muscular rigidity, a rise in temperature, and a leucocytosis are practically always found in acute appendicitis. Hence the diagnosis seems easy, but a severe chill, a very high temperature, and a high leucocyte count should always make one stop, look, and listen. A severe chill is not a symptom of appendicitis. A few patients may complain of slight chilly sensations early but it may be stated that appendicitis is practically never ushered in with a severe chill. The rise in temperature in appendicitis is gradual and seldom reaches $103\frac{1}{2}^{\circ}$ to 104° ; in fact the most serious fulminating cases the rise in temperature is apt to be quite insignificant and quite out of proportion to the seriousness of the attack. The leucocytosis is likewise as a rule only moderate—12,000 to 15,000 or 20,000. Of the 145 cases of pneumonia already mentioned only 9.8 per cent had a leucocyte count below 15,000; while 90 per cent of them had a count over 15,000 and 66.5 per cent had a count of over 20,000. On the other hand, of forty-two cases of real acute appendicitis admitted to the same hospital, 91.5 per cent had a leucocyte count below 15,000, and not a single case had a count over 20,000. The great importance of the blood count in these cases from the diagnostic standpoint is therefore perfectly evident. A leucocyte count of 20,000 or over in children should make one look and think twice before diagnosing appendicitis. The same is true in adults, although the count may go a little higher, but a leucocyte count of 25,000 or over in the early stage of acute appendicitis is most unusual. This point is again illustrated by another case seen recently by me in consultation. A little girl between five and six years of age was taken rather suddenly with quite severe pain in the right side of the abdomen and back, a high temperature of 104° , and a leucocyte count of 28,000. The abdomen became some-

what distended with marked muscular rigidity and tenderness on the right side. The case was diagnosed acute appendicitis and the little patient taken to the hospital and operated on at once. The patient did not do well, and on the second day post-operative I saw her in consultation. The doctor who had operated on her told me that much to his surprise he had found the appendix normal and no free fluid in the abdominal cavity. He was therefore at a loss to account for the serious condition of the patient. This patient certainly presented many of the symptoms of acute appendicitis, but the two things which should have made one hesitate and to look further for the cause of the symptoms were the very high temperature and the high leucocyte count, for, as already stated, these two conditions are seldom found in acute appendicitis in children. On inquiring a little more closely into the history of the case it was learned that the child had had a tonsillitis about a week before her present trouble began. This gave a clew to a point of entry of the acute infection. An examination showed that while the abdomen was somewhat distended and generally tender the greatest tenderness was in the right loin just below the twelfth rib. This whole region was very sensitive and distinctly bulging. An examination of the urine revealed albumen and numerous red blood cells. The diagnosis now became clear. Tonsillitis followed by an acute hematogenous infection of the right kidney. A posterior incision down to the kidney gave exit to much foul pus and showed the perirenal tissues in a sloughing condition. The child was in an extremely septic condition and died three or four days later. These cases of acute hematogenous infection of the kidney have been mistaken quite often for acute appendicitis.

When we come to chronic conditions in the abdomen the difficulties of diagnosis are greatly increased. There are so many conditions that give rise to similar symptoms that a differentiation can be made only after carefully weighing all of the facts obtained from an accurate history of the case, particular attention being paid to a chronological sequence of the events and from a thorough examination of the patient, including the necessary laboratory and other findings. The two symptoms most commonly complained of by this large group of patients are pain and gastric disturbance. Pain is used here in a broad sense and includes all degrees and varieties from severe pain to simple distress or ache. The particular character of the pain is of much significance and the patient should be asked to describe as clearly as possible the particular pain or dis-

tress complained of. The patient should likewise locate accurately the site of the pain by placing the hand or the finger on the exact spot. It is also of importance to know whether the pain is always located at the same spot, and whether it remains stationary or radiates to some other part, or in some particular direction.

Next to pain in frequency is disturbance of the functions of the stomach. In evaluating these symptoms one must determine first whether the symptoms complained of are due to actual disease of the stomach itself or whether the site of the real trouble lies elsewhere, the stomach being disturbed reflexly. This is not always easy to do, in fact, to differentiate between real gastric pathology and extra gastric pathology is often the most difficult part of the diagnosis. It is surprising how many stomachs have been operated on for gastric crises of tabes, for so-called gastric neuroses, gastric disturbances due to chronic appendicitis, gall-stones, cholecystitis, movable kidney, kidney stones, movable liver, omental and intestinal adhesions, particularly post-operative, etc. One of the most important factors in the diagnosis of these cases is a carefully studied clinical history. The great tendency today is to rely too much on laboratory findings and the x-ray. While these aids to diagnosis are not to be neglected in obscure cases, their value has been greatly overestimated. They should be studied only in connection with the clinical history and a diagnosis should not be based on them alone. If there is one feature more than another which distinguishes the symptoms of gastric from extra gastric trouble, it is continuity. There is a continuity of symptoms in real gastric pathology which is seldom seen when the gastric symptoms are due to trouble outside of the stomach. It is true that there is a certain periodicity connected with gastric and duodenal ulcers, periods of variable duration when the symptoms are worse, and again when they are better, but during the exacerbation periods there is a distinct continuity of symptoms. If a patient who has had a previous operation returns complaining of pain in the abdomen, with gastric symptoms, the first thing to be thought of as the cause of the symptoms is post-operative adhesions—adhesions of the omentum or intestines to the abdominal wall, usually at the site of the former operation. It is remarkable how frequently this simple cause of the symptoms is overlooked. Nor should one be misled by the fact that the operation was performed quite a long time before, nor by the fact that a considerable period of good health intervened between the operation and the appearance

of the symptoms complained of. I have seen cases in which an interval of several years, as much as fifteen, has intervened between the time of the operation and the appearance of the symptoms, although this is not the rule. It is difficult to account for the delayed appearance of the symptoms in some of these cases in which it is perfectly evident that the adhesions must have formed immediately following the original operation. I have seen these cases treated for months for gastric ulcer on account of the prominence of the gastric symptoms.

Another condition which occasionally is overlooked, thus leading to serious error in diagnosis, is disease of the spinal cord, for instance, tabes, giving rise to gastric crises. The error here is due to a failure to properly examine the nervous system in all cases showing acute periodical gastric disturbances. The organs most frequently involved in the production of symptoms such as we have mentioned referable to the abdomen are the appendix, the liver, and the kidney. Trouble with any one of these organs may give rise to pain in the abdomen and gastric disturbances, and mistakes in diagnosis are quite common. It is only by a most searching inquiry into the history of the case together with a careful painstaking physical examination that a correct solution is at times possible. It is so easy to diagnose chronic appendicitis and it is such a simple operation to remove a normal appendix that the number of patients who have had their appendices removed without being relieved of their symptoms is altogether too large. If the appendix is the seat of the trouble the pain in the side is often made worse by violent exercise, such as long walks, tennis, or basketball. At such times the tenderness is increased. The exact point of tenderness should be very accurately determined and it should correspond to the location of the appendix. When a tender appendix is pressed on pain often shoots up to the epigastric region and nausea may be produced.

Trouble with the kidney, such as chronic pyelitis, slight dilatation of the pelvis, due to kinking of the ureter, to movable kidney, to partial compression of the ureter by periureteral adhesions, or bands, abnormal blood-vessels, etc., are frequently overlooked, or when on the right side, are diagnosed chronic appendicitis and the appendix removed without benefit. These cases are to be recognized by eliciting a history of slight urinary disturbances, such as occasional attacks of frequent urination, the passage of an unusual quantity of urine during or following the attacks of pain, the presence of pus and bacteria in the

urine taken directly from the kidney, by pyelography, by the ability to produce pains similar to those complained of by injecting the pelvis of the kidney, by finding a characteristic point of tenderness at the costal vertebral angle, by palpation of a movable and perhaps tender kidney, pain radiating downward toward the bladder, tenderness along the course of the ureter, etc. In connection with the liver we may mention chronic infections of the gall-bladder, with or without gall-stones, adhesions or attachments of the gall-bladder to the colon, omentum, duodenum, due to inflammatory adhesions or to the persistence of the anterior mesogastrium, movable liver, etc. The center of pain in these cases is usually in the right hypochondriac region but occasionally it may be in the epigastric region, or even to the left of it, or rarely as has been pointed out by Moynihan and which I have myself seen, the pain may be referred to the lower part of the left side in the region of the sigmoid. If the pain radiates it is usually to the back or up under the scapula. Wherever the patient may locate the pain there is practically always tenderness and soreness in the region of the gall-bladder during the attacks. There is also a point of tenderness which can be found quite frequently at the tenth intercostal space posteriorly. It may be elicited even during the interval between attacks and when present is quite characteristic and of diagnostic value. The so-called Mussy point is of considerable diagnostic value. This is a point of tenderness on a line with the border of the sternum left or right, at the level of the tenth rib.

In thirty-five cases of gall-stones Mussy point was positive on the right side in thirty-two. It was constantly negative in fifty cases of gastric ulcer and in ten cases of gastric carcinoma and in fifty-eight other abdominal infections, appendicitis, etc. I have noted this point of tenderness and have found it of value in the differentiation of these cases.

I should like to call attention now to the great value of nerve blocking in the diagnosis of many of these surgical conditions. As has been already mentioned, the pain in many of these cases is of a reflex nature, that is, it is often referred to a point or region somewhat remote from its real point of origin. The pain may have its point of origin in one of the abdominal organs and be felt by, or referred by the patient, to some point or region on the surface of the body, or it may have its origin in a region supplied by somatic nerves and be referred to an internal organ. If we block the afferent nerves of the organ or part diseased, the local pain or tenderness disappears at once,

as well as the reflex or referred pain. I will briefly mention a few recent cases to illustrate the value of nerve blocking in diagnosis.

Mr. B., about thirty years of age, had had his appendix removed a little over two years previously. Shortly after getting up and around he began to complain of pain in the abdomen at irregular intervals with a feeling of soreness in the right side in the region of his former operation. The trouble gradually increased in severity until he felt obliged to apply for relief. The question naturally arose as to whether or not the pains were due to adhesions in the region of the old scar following the operation for the removal of his appendix. If the pains were due to adhesions the impulses giving rise to the sensation of pain must travel along the somatic nerves supplying the peritoneum and abdominal wall at the site of the adhesions—in this case the 10th, 11th and 12th dorsal nerves on the right side. I therefore blocked these nerves shortly after their exit from the vertebral canal, when his pain disappeared at once, as did also all local tenderness. An operation a few days later verified the diagnosis as firm adhesions were found fixing the omentum and a portion of the transverse colon to the inner surface of the old scar.

Mrs. K., forty-four years of age, had complained of pain and distress in the upper abdomen for about five years. She had also suffered with headaches at irregular intervals for a much longer period. The pain of which she complained most was located along the distal portion of the tenth dorsal nerve on the left side and Mussey's point was extremely well marked on the left side. She complained of no pain in the region of the gall-bladder and no pain radiating to the back or scapular region. There was a little tenderness over the gall bladder on deep pressure when she tried to take a deep breath. However, the tenderness here was not nearly so great as it was at Mussey's point. Pain sense from the abdominal organs is transmitted along the splanchnic nerves and through the rami communicantes to the spinal cord. Considerable work has been done in an endeavor to determine the particular spinal nerves which eventually reach the different organs through the splanchnics and much has been learned in this connection. Lawen seems to have shown that the seventh dorsal nerve reached the lesser curvature of the stomach, the right tenth dorsal the gall-bladder, and the right first and second lumbar nerves the appendix. In the case just mentioned, I therefore blocked the right tenth dorsal nerve and found that the tenderness over the region of the gall-bladder disappeared as well as all tenderness at Mussey's point and the pain along the left tenth dorsal nerve. This indicated that the pain in the left side was reflex in origin and enabled me to make a diagnosis of gall-stones. At the operation two days later two quite large mulberry gall-stones were found and removed, the patient making a good

recovery. It is evident that the blocking in these cases must be done directly the nerve leaves the intervertebral foramen so as to include the rami communicantes.

The next case illustrates beautifully the fact that stomach disturbances may be due to peripheral irritation. A man about thirty years of age met with an accident which he thought was instrumental in causing or aggravating an inguinal hernia on the left side. A little later the hernia was operated on, and shortly thereafter he began having attacks of severe pain in the abdomen with vomiting and his attacks became so severe and so frequent that he was obliged to give up his work and enter the hospital. Careful inquiry developed the fact that his attacks seemed to start with pain in the region of the operation for the hernia and extended rapidly to the epigastric region when the vomiting began. Not being able to discover any reason why he should have such vomiting spells with pain in the epigastric region, I thought of the possibility of its being reflex in origin. I therefore blocked the ilio-hypogastric and the ilio-inguinal nerves which supply the region of his hernial operation, when his vomiting and abdominal pain disappeared at once.

I shall mention just one more case to illustrate the value of nerve blocking in diagnosis. A young man about twenty-four years of age had been treated for three years for what had been diagnosed tuberculosis of the hip. During this time he had been in bed for months at a time with an extension on his leg and with the leg and pelvis in plaster casts. When I first saw him he had been trying to get around a little on crutches with the leg in an extension Thomas brace. The leg could not be moved without great pain and he was in constant fear of someone touching it or bumping against it. The history showed that a short time before he began having trouble with the hip he had undergone an operation on the same side for an inguinal hernia. The pain in the hip began in the scar of the hernia operation. On examining the leg it did not show a degree of atrophy nor were there findings about the hip which one would expect to find after three years of tuberculosis of that joint.

I therefore suspected the trouble was a neurosis and the inability to move the leg was due to the fear of pain, the pain having its origin in the scar of the operation. I then blocked the ilio-hypogastric and the ilio-inguinal nerves, and when the area of the former operation was completely anesthetic I removed the brace from the leg and was able to move the leg in all directions without pain. I then had him stand up on that leg without crutches, something which he had not done in three years. With a little encouragement he was able to walk and had no pain whatsoever. When the effects of the local anesthetic wore off his pain returned. The two nerves mentioned were then resected near the anterior superior spine of the ilium, thus rendering the area of the scar permanently anesthetic. From that day the

patient was cured of his trouble and has remained perfectly well since. This was a remarkable example of akinesia algira, the diagnosis of which was made easy by blocking the nerves supplying the area in which the pain had its origin.

Nerve blocking is of great value in industrial surgery in aiding in the diagnosis of real trouble from feigned conditions or malingering, as for example when a patient claims inability to move a joint on account of pain, or in painful backs, etc. If the trouble is real blocking the nerves, thus rendering the parts anesthetic, will permit the joints to be moved or the parts manipulated without pain, but if the trouble is feigned or the patient is malingering, the patient not knowing what to expect from the blocking will still complain of the pain just the same, or even say that it is worse on account of the injections.

There are a great many ways in which nerve blocking may be used in diagnosis, but owing to lack of time I shall have to be content with these few suggestions and leave the rest to be worked out by your own ingenuity.

EXTRAPERITONEAL CAESAREAN SECTION*

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Our national government has lately undertaken to regulate the management of maternity cases.

This fact alone is sufficient to indicate that the need and the demand for improvement in our obstetric practice is imperative.

The causes for our delinquency in this doubly important branch of our art are manifold and singularly elusive and complicated.

In the great majority of instances, childbirth is a rather simple biological event.

This circumstance, associated with considerable natural tact, has enabled many a doctor to acquire an enviable reputation as an obstetrician, or, even to pose as an expert in this surgical specialty, who, in reality has very little scientific knowledge and no particular technical skill.

It is clear that pompous egotism and the ability to "jolly the natives" is a powerful combination.

But, it must be equally apparent that when it is left to cope with a case of dystocia the result is apt to be disastrous to both patients. Another performer who owes his prestige to the simplicity of the average labor case is the professional critic

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who bursts into print, periodically, with a paper on "meddlesome midwifery."

While it may be true that this, so-called, conservative school has done good in preventing an occasional ill-advised operation, it is certain that the chronic obsession to do nothing for the woman in labor has been the cause of untold suffering and has, more than any other one thing, impeded true progress in the science and the art of obstetrics. In this matter, at least, orthodox theology has been more humane, more enlightened and more progressive.

It is a daily observation that in communities where modern hospitals have been established the very element for whose comfort and security these facilities have been provided is slow to accept them even, gratuitously.

No matter how scientific and beneficent the treatment, no matter how sympathetic her welcome, there is a type of obstetric patient, who, with a sort of instinctive stupidity, will cling to her home, humble and desolate though it be. So, that it is only fair to say that by far the most prolific source of invalidism and mortality resulting from poor obstetric practice, as well as almost all other miseries, will be found to be due to just ordinary human perversity and ignorance.

It has always been fashionable to blame the general practitioner for all the bad results in obstetrics. Many teachers of this specialty are slow to admit that their students have learned anything from them.

And, of course, it can not be denied that the training received by the average doctor in practice today in this branch of surgery has been woefully inadequate. It is only logical to admit that this circumstance will account for a considerable number of obstetric tragedies.

It is reassuring though to know that many general practitioners have early realized their deficiencies and through study and experience have learned much.

Equally gratifying is the advent of the expert accoucheur. Years of conscientious effort and special training have enabled him to qualify not only as a skillful surgeon, but as a judicious and accomplished obstetrician as well.

It may be safely predicted that wherever men of such attainments become available the ills of afflicted woman-kind will be substantially reduced.

But, even then, if the best results are to be attained, there must be intelligent cooperation between patient, general practitioner and specialist.

However, we must always bear in mind that in every generation there has labored in the field of

obstetrics an increasing number of "true prophets." And, it is a great privilege to acknowledge the debt we owe them. As each contribution to the progress of general surgery became a matter of daily practice and as each development in surgical technique was evolved these masters of the obstetric art endeavored to apply them at the bed side.

It is a matter of medical history that they were often overenthusiastic and even credulous. Many times, the so-called newer methods were heralded as a panacea for the management of every form of dystocia. After a more extensive experience with them and after a more critical analysis of the principles involved the new procedures proved illusory with a regularity that was almost disheartening.

There can be no doubt that this scientific gullibility has contributed its quota of obstetric casualties.

These observations apply with particular force to the question of Cesarean section.

It is therefore not surprising that the latest novelty in operative obstetrics should be viewed askance by many authorities and general practitioners.

But with each wave of enthusiasm there has remained in the world a modicum of true workable knowledge.

After making due allowance for all exaggerations and premature conclusions, there still remains abundant clinical evidence to warrant the assertion that extraperitoneal Cesarean section including its various alterations, constitutes an advance in operative obstetrics that borders on the marvelous.

Like so many other new ideas in surgery the suggestion to enlarge the preperitoneal space sufficiently to permit the delivery of a child from the lower uterine segment is not new at all.

A hundred years ago Dr. Phillip S. Physick of Philadelphia proposed that "in the Cesarean section operation a horizontal section be made of the parietes of the abdomen, just above the pubes" and that, "the peritoneum be stripped from the upper fundus of the bladder by dissecting through the connecting cellular substance which will bring the operation to that portion of the cervix uteri where the peritoneum goes to the bladder. The incision being continued through this portion of the uterus will open its cavity with sufficient freedom for the extraction of the foetus."

Latzko, whose extraperitoneal procedure is one of the best hitherto described gives Dr. Physick full credit for this clear cut description of the

anatomy involved in the modern extraperitoneal Cesarean section.

"We see," he says, "there is nothing new under the sun." "Dr. Physick's proposal and Sellheims method are, in their essentials, scarcely to be differentiated."

The eager interest which greeted the revival of this operation by Fritz Frank in 1906 again verifies the old proverb that "necessity is the mother of invention."

Every practitioner of any experience will surely agree that there is an urgent need for some method of suprapubic delivery that can be performed with comparative safety even after the condition of the mother is no longer an ideal one.

In fact, that is the very problem that the average doctor is, several times in his life, called upon to solve.

After rupture of the membranes and after more or less questionable intravaginal and intrauterine manipulation it is found that delivery through the natural route is out of the question and that the child is still living and vigorous. It is this indication that extraperitoneal Cesarean section is intended to meet.

In the effort to determine the practical value of any therapeutic measure it is always well to examine it in the light of fundamental principles.

The basic laws of physiology and pathologic anatomy will not be suspended or even altered, in the slightest degree by the most vociferous scientific controversy.

It will be obvious at once, that no sort of surgical intervention will cure general puerperal septicæmia. Whether Cesarean section, hysterectomy, craniotomy or no operation at all is undertaken, the clinical fate of such a patient is determined by the degree of virulence and the extent of distribution of the infecting agent and the resistance that the tissues may offer to the septic invasion.

So if we are to take seriously the glowing account of cases successfully operated by extraperitoneal Cesarean section the whole procedure must be reasonable and, above all, the reports must not conflict with the well established general principles of surgical pathology and bacteriology.

When the uterine cavity is infected and its wall is incised in such a way that large areas of peritoneal and cellular surfaces are flooded by infectious material there will prevail a tendency to spread the infectious process.

It would be idle to deny or to ignore a fact so fundamentally evident. In fact, it is precisely in Cesarean section that the surgeon will have to

contend with more than the usual number of factors which tend to defeat his enterprise.

If a wound is to heal without reaction it must be aseptic and it is essential that the tissues involved be sound and that the opposed surfaces be more or less securely immobilized.

A wound in the body of the uterus at the time of labor is constantly subjected to post-partem puerperal contractions. In the process of involution many of the cells are undergoing, fatty degeneration and disintegration.

If in addition to these elements of weakness infection supervenes, it is clear that the suture line will give way, and peritoneal contamination with fatal peritonitis will be the inevitable result.

In case that the operation has been delayed until the uterine muscle has been bruised and exhausted, and the general condition of the patient reveals failing vitality and circulation, the factors mentioned will operate with even more certainty and extent.

In this connection, it needs to be remembered that in addition to the difficulties enumerated, we have here the old surgical problem of producing a suture line that will not leak in a hollow viscus whose contents are septic, or will shortly become so. If the integrity of the suture line is questionable we must, as in intestinal surgery, provide an external exit for the discharges.

There is another difficulty peculiar to this operation. The degree of virulence of a puerperal infection cannot be determined by any practical bacteriological examination. Twenty-four hours are required for this, and it is obvious that just in the cases where it would be needed most, there is not time enough to carry it out. So that we must remain more or less in doubt, so far as knowing how severe the infection happens to be: and it must be admitted that this is a very vital point.

It has happened that patients who were considered ideal cases for Cesarean section died very promptly from peritonitis after the operation.

These mysterious fatalities will be more readily understood if we bear in mind that the vagina, and at least the lower third of the cervix, are always liable to contain potentially septic bacteria, and, as Watkins has just recently emphasized "irrespective of every attempt at antisepsis to render them sterile."

It is a well established fact that tissues exposed more or less constantly to infection will develop and exhibit a corresponding degree of resistance to microbic invasion. And, it is well known too, that in parts of the body well protected from every form of contamination, such as the medi-

astinum, for instance, the tissues exhibit a comparatively low degree of immunity against infection.

So the tissues of vagina and cervix accustomed to battling infection have developed a substantial degree of resistance to bacterial invasion.

This circumstance will explain why lacerations of the cervix and abrasions in the vagina so comparatively seldom result in dangerous infection. On the other hand, the cavity of the uterus is normally sterile. Consequently, its resistance to infection is comparatively low. So that in this location bacteria may exhibit great virulence which in the lower birth canal are quite innocuous.

That these considerations are of tremendous importance in the technique of any type of Cesarean section must be clearly evident. If during the performance of this operation, hands and instruments extend their manipulations into the cervix, or even into the vagina, it will be easy to understand how infection of the operative field, often such a profound mystery in this procedure, has actually transpired.

These observations explain too why early rupture of the membranes and preliminary vaginal examinations and attempts at delivery are so inexorably fatal when followed by a classical Cesarean section. Accordingly, in a primipara, at least, no vaginal examinations should be made until it is certain that the fetus will engage and pass the birth canal.

In the number and variety of its so-called improvements, extraperitoneal Cesarean section has exceeded even the kaleidoscopic record of the round ligament.

In the first place, the question arises whether the route to the lower uterine segment shall be literally by way of the preperitoneal cellular connective tissue, or whether the free peritoneal cavity shall be opened and the visceral and the parietal peritoneum be temporarily united by suture or clamps, thus rendering the field of operation to this extent extraperitoneal.

However, many authors ignore this phase of the question entirely, and in their references to extraperitoneal Cesarean section they include all types of suprapubic procedures which involve the lower uterine segment.

And, so far as practical results are concerned it would seem that this generalization is justified. For, when compared to the classical operation, the low incision is of itself distinctive.

During pregnancy and labor the peritoneum covering the body of the uterus is firmly adherent

to the underlying muscle while over the lower segment its attachment is comparatively loose.

This regional mobility of the peritoneum is of the greatest practical importance. It enables the surgeon to perfect a suture line so securely reinforced by opposing broad peritoneal surfaces to one another that the possibility of leakage into the free peritoneal cavity is practically excluded.

Taking the fullest possible advantage of this anatomical circumstance is the feature that makes the "Two flap low incision Cesarean section described by Alfred C. Beck such a satisfactory procedure.

But even in the purely extraperitoneal technique, success depends largely on the degree of mobility exhibited by the vesico-uterine fold of peritoneum.

There are several etiologically different types of peritonitis. Contamination peritonitis results from soiling of the field during the operation.

Then there is the peritonitis that has its origin within the uterine cavity and extends to the peritoneum and the blood stream by way of the lymphatics. No surgical intervention will benefit this condition. It is the type of case that will succumb even after spontaneous delivery.

But, by far the most frequent cause of peritonitis in Cesarean section is a deficient leaking suture line. And, it is this source of mortality that surgeons have practically eliminated by utilizing to the fullest extent the mobility of the peritoneum over the lower uterine segment.

In this connection another very practical consideration might as well be mentioned. The longer labor has continued the more the lower uterine segment becomes distended, and the more it retracts over the presenting part, the greater will be this mobility of the peritoneum and the more readily can this anatomical advantage be utilized in a practical way.

No one will seriously question the statement that there are borderline cases of pelvic contraction in which it is impossible to say, at the onset of labor, whether the head will engage and pass the pelvis or not.

This brings us naturally to a consideration of another very practical advantage of the low incision Cesarean section. The woman may safely be given a test of labor.

In other words, some type of extraperitoneal Cesarean section may be safely done at a time when the condition of the mother is no longer an ideal one.

It follows that the possibility of an unnecessary Cesarean section so often the mournful

theme of atrabiliar critics may be with certainty avoided.

In fact, as indicated above, not only can the woman be given safely a test of labor but, other things being equal, the technical execution of the low incision Cesarean section becomes more easy the later in labor it is undertaken.

So this operation meets not only the positive indications for Cesarean section, but the relative indications may be extended almost indefinitely.

It may be safely done at a time and in conditions when the old classical Cesarean section would be simply out of the question. It enables the surgeon to take into consideration not only the clinical fate of the mother, but he may conscientiously plan and perform any one of the several types of extraperitoneal Cesarean sections in the sole interest of the child. And, the cold hard facts of science cannot always be entirely divorced from the more simple human sympathies.

The sunshine, the life, the hope and joy that these very children often bring into homes hitherto barren and desolate is simply beyond all economic or human calculation.

It is easy, therefore, to agree with Ernest F. Neve when he says "craniotomy on a living child is little short of homicide."

When compared to the advantage of saving the lives of children which were formerly destroyed, it seems almost inconsequential to enumerate other reasons for preferring the low incision Cesarean section.

In this type of operation the incision is made in the more distal and the more passive portion of the uterine muscle. Accordingly, there will be less shock, better healing conditions of the suture line and the loosening and expulsion of the placenta and membranes will be more simple and physiological.

There is less tendency to hemorrhage during and after the operation. The possibility of peritonitis is remote and when it does occur, conditions for its localization and drainage are more favorable.

It has just lately been emphasized by Vogt that the low Cesarean section incision is outside of the "nidation area" and that for this reason subsequent fertility remains unimpaired. This would not be considered an advantage by those authors who hold that every woman subjected to Cesarean section should be sterilized.

It goes without saying that the normally implanted placenta will not be encountered in the course of a cervical Cesarean section.

It is quite generally held too that, in a subse-

quent pregnancy the scar in the lower uterine segment is less likely to rupture than one situated in the uterine body.

In accordance with general surgical principles it will be quite obvious however, that the security of the scar will depend more on the question of infection than on the exact location of the uterine incision. If, after the section, there has been an absence of every degree of febrile reaction it is safe to assume that the wound in the uterus has healed by primary union, and that in a subsequent pregnancy the scar will withstand all ordinary and reasonable requirements.

It is apparent at once that the purely extraperitoneal type of Cesarean section has many advantages over every form of its transperitoneal modifications. Notwithstanding, the ingenious and practically efficient utilization of the characteristic mobility of the peritoneum over the lower uterine segment during labor, the strictly extraperitoneal approach to this region will always appear to the experienced surgeon the more ideal route.

He will reason, naturally, that since septic peritonitis is the one great danger in every variety of suprapubic delivery it is the part of wisdom to leave the peritoneum intact. In that case there will be no peritoneal reaction, no paralytic ileus and no adhesions. Convalescence will more nearly resemble that observed after a normal labor.

There is extant much conflicting testimony on the technical phases of this type of operation.

Latzko reports a case in which it required only twenty minutes to complete the whole procedure. Sellheim, himself, mentions an instance in which the performance of any kind of truly extraperitoneal Cesarean section was technically impossible.

These conflicting reports will be readily understood when we recall that the whole question of technical execution in this operation depends largely on the degree of mobility exhibited by the peritoneum covering of the lower uterine segment. If from any cause, whatsoever, such as, previous inflammation or operation, this anatomical advantage is not sufficiently available the technical difficulties may well become insurmountable. Fortunately this situation will not often arise.

On the whole it may be assumed that any surgeon who can remove impacted stones from the lower end of the ureter by the extraperitoneal route is technically qualified to undertake to do an extraperitoneal Cesarean section.

In fact, the technique of this operation as de-

scribed by Kustner, Latzko and Doederlein up to the point where the side of the bladder becomes visible, resembles in all essential details the incision proposed by E. S. Judd for the extraperitoneal exposure of the lower end of the ureter.

But, of course, this is not an operation for the surgeon who might become disconcerted by technical difficulties. Whether the indication for extraperitoneal Cesarean section may be extended to include a given borderline case of dystocia is often a problem that requires for its correct solution the finest surgical judgment. In fact, it is in placing the indications rather than in technical execution that the highest degree of skill is required. It can not be taught or even described. It is a kind of intuitive, almost uncanny, ability to do the right thing at the right time.

It is often contended that the obstetrician should do the operation that he is best qualified to perform. At the present time such a proposition should not be approved.

The mere fact that a surgeon is better trained to do craniotomies should not constitute an indication for the performance of this obsolete barbarity on a living child.

A higher conception of his mission should prompt him to familiarize himself with expedients that, without increasing the risk to the mother, will enable him to save the life of the child.

Many authors have written on the technique and the results of suprasymphysial cervical Cesarean section. We have not the time even to enumerate them all.

It is a most significant circumstance, however, that those surgeons who have had most experience with this operation are most favorable in their comments. Hirst, DeLee, Markoe, McPherson, Opitz, Polak, Gellhorn, A. B. Davis, Druskin, Welton, Beck, Veit, Fromme, Sellheim, Kustner, Latzko, Doederlein, Baisch, Hofmeier, Kronig, Hall and Ballantyne, Neve, Fehling, Kerr, Henkel and many others all regard this procedure as a great advance in operative obstetrics.

CONCLUSIONS:

1. It will be admitted that in the light of present knowledge our results in obstetrics should be decidedly better.

2. One cause of our failure in this doubly important branch of our art is to be found in the paradoxical circumstance that the more serious complications of pregnancy and labor are comparatively rare. Consequently, too much is taken for granted and when trouble does arise the clinician is not prepared to meet the emergency. But,

after all, the most frequent cause of obstetric disasters is just ordinary human perversity and foolishness.

3. Extraperitoneal Cesarean section constitutes a real and beneficent progress in operative obstetrics. It is based on sound anatomical and surgical principles and enables the surgeon to save life where formerly it was destroyed.

4. The results in our obstetric practice will improve in proportion to the extent to which there will be intelligent cooperation between patient, general practitioner and obstetric specialist.

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THE CARE OF OUR PATIENTS BEFORE, DURING AND AFTER CONFINEMENT*

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In no branch of medicine does the physician, young as well as old, feel as confident of securing results as he does in obstetrics. Certainly in no other field of medicine does the doctor take as much for granted and risk as much as he does in the practice of midwifery. The reason for this is that pregnancy and labor are considered to be normal processes in the large proportion of women. However, facts disprove this. In this country, according to De Lee, about 20,000 women and about 250,000 babies lose their lives yearly as the result of childbirth. Furthermore, of the women who recover, fully one-half suffer for years from the effects of labor. Approximately one-half of our gynecological operations are necessitated by the damage resulting from labor. Nowhere in nature do we find a normal process which is associated with such a frightful number of deaths, with as much trauma and as much permanent invalidism as results from childbirth. For these reasons we cannot call labor a normal process.

Fortunately these conditions are remediable. Careful observation of patients during pregnancy and the proper conduct of labor will considerably reduce the maternal and fetal mortality and morbidity. Prophylaxis is most essential in pregnancy and for its success, education of the public is necessary. The layman must be given to understand that a labor case begins at the time of conception and that it is important for the pregnant woman to see a physician as soon as she knows she is pregnant. Once in the hands of a physician, the responsibility rests largely upon the latter. It is his duty to properly instruct the woman and he should see that his orders are carried out.

During pregnancy there are certain fundamental things a physician should do. First of all it is essential that a history along certain lines be taken. In the family history, the childbirth experiences of the patient's mother and sisters may give some clue as to the patient's obstetrical possibilities. In the patient's past history, certain illnesses, especially infections, should be noted and also any operations, more particularly abdominal ones. If the patient is a multipara, her past obstetric history is important; because as a rule, a woman will show her obstetric form in her first

labor. A history of miscarriages, their time of occurrence and other data may help. These histories should be kept permanently.

The next thing is a careful general physical examination which should include not only the heart and lungs, but also possible sources of infection, such as the teeth, tonsils, sinuses, etc. A history of, or evidence of, gonorrhea or syphilis is important. If a number of miscarriages have occurred, a Wassermann test may help.

Of greatest importance is the special obstetrical examination. This should include both external and internal measurements and an abdominal and vaginal examination.

The patient should be seen by the physician every three weeks during the first seven months of pregnancy and every two weeks thereafter. During these visits the blood-pressure should be taken, the urine examined and the general health of the patient observed. From time to time an abdominal examination should be made and the fetal heart auscultated.

Certain information should be given the patient on her first visit. This is probably best distributed in printed or typewritten form. The patient should be told to regulate her diet so as to eliminate as much meat, fish and other proteins as is convenient. She should drink an abundance of water and see that her bowels move daily. A certain amount of light, outdoor exercise, usually walking, is essential. The clothing should be of such a character that there are no circular constrictions anywhere. Circular garters therefore, are to be discarded as they tend to cause varicose veins. After motion is felt, the corset should be replaced by a light abdominal support which tends to elevate the uterus. Sexual intercourse should be restricted throughout pregnancy and absolutely forbidden during the last six weeks. The nipples should be washed once a week with green soap and water and anointed daily with sterile albolene. During the last three weeks tub baths should be forbidden. The physician should be notified if any of the following symptoms arise: edema, severe headache, visual disturbances, diminished urinary output, bleeding, excessive vomiting, marked constipation or epigastric pain. If a patient goes beyond term, she should be examined at least once a week after the expected date of confinement. Labor should be induced if the child is large.

Of the complications which may arise during pregnancy, very little can be said in such a comprehensive paper as this. The usual disturbances are the toxemias, including excessive vomiting and eclampsia, pyelitis and placenta prævia; but

*Read at Hardin County Medical Society Meeting.

fortunately they are not very common. The toxemias, because their etiology is still unknown, are treated empirically. This as well as placenta prævia will be discussed later. For pyelitis, in addition to the use of posture and forcing water, one may give alkalies or hexamethylamine with sodium acid phosphate. If unsuccessful with drugs, lavage of the renal pelvis will nearly always relieve the condition.

When a woman goes into labor, the best place for her is a hospital. Unfortunately however, the majority of women are still delivered at home. Of prime importance for the physician who is going to do a delivery at home, is preparedness. A physician should be ready with both knowledge and instruments, to deal with most obstetrical complications. If possible an assistant, a physician or nurse, should be present.

You will agree that asepsis and antisepsis are basic principles. In the home they are difficult to carry out; but there is no doubt that they can be practiced there effectively. The technic our internes of the Chicago Lying-in Hospital and Dispensary use in the homes is a model for simplicity and effectiveness, and can easily be acquired. Rubber gloves are indispensable.

When called to a patient in labor, it is advisable to respond as quickly as possible. A careful abdominal examination is to be made to determine the exact presentation and position of the child and the heart tones should be counted. A rectal examination should be made to determine the amount of effacement and dilatation of the cervix, whether the membranes are intact and the station of the head. It is much simpler and safer to make rectal examinations than vaginal ones. With a little experience, one will be able to conduct fully 95 per cent of all labors without vaginal examinations. If the patient is in active labor, the vulva is to be shaved. The blood-pressure should be taken and the urine examined because a sudden change may have taken place. If the heart and lungs had not been examined before, they should be at this time.

The general plan of treatment in the first stage of labor is one of watchful expectancy. The fetal heart tones should be counted at least once an hour during this stage. If the pains are very strong and delivery is not expected for at least three to four hours, it is advisable to give morphine and scopolamin. These drugs are very helpful, especially in primiparas. Nourishment of the patient should not be overlooked and this should be mostly in liquid form. The bladder is to be watched and the patient should be encouraged to void at least every four hours. If neces-

sary, catheterize; for a full bladder may interfere with the progress of labor. The bowels should be kept open, if necessary by an enema. The patient should not be permitted to bear down during the first stage as it is useless and will waste her strength which will be necessary for the second stage. Furthermore these expulsive efforts may do harm by forcing the undilated cervix downward and prepare the way for a future prolapse of the uterus.

Throughout labor one must watch for signs of trouble. Nature usually throws out little signals which, if properly evaluated, give us a clue that something is wrong.

In the first examination made during labor, it is essential that a contracted pelvis be recognized. If at the onset of labor in a primipara, the head overrides the pubis, trouble may be expected. An effort should be made to determine whether the head can enter the pelvis. If there is evident disproportion, a Cesarean section must be done. If uncertain, the patient should be given a test of labor to see whether the head will enter the pelvis. If it fails to enter after a reasonable time, abdominal delivery is advisable. It is necessary to recognize a disproportion early in labor. Else the patient will be permitted to labor a long time, the membranes may rupture, infection may set in and an attempt at forceps delivery be made before the true condition is recognized. It is then too late to deliver a live baby without danger to the mother.

Another condition which should be recognized early is that of occiput posterior. When this is present especially in primiparas, labor usually lasts a long time. In these cases morphine and scopolamin should be given after labor is well started. Fortunately most of these heads rotate anteriorly and deliver spontaneously. Despite this however, more babies are lost from occiput posterior than from any other one cause. This is essentially due to failure in making a correct diagnosis early in labor. Yet the diagnosis is relatively easy. First of all, the type of labor may give a clue. The pains are weak and irregular and early rupture of the membranes is frequent. The head remains high for a long time and even though strong pains occur, the head may be turned only part way and be arrested in the transverse diameter. Dilatation of the cervix is incomplete because the head does not fit well. Abdominally, a distinct hollow over the symphysis may be seen. The shoulder is far back from the mid-line and the fetal heart tones are usually deep in the flank, but may be heard on the opposite side. The small parts are very prominent an-

teriorly. Internal examination will reveal the head high up, partly deflected, the large fontanelle being more accessible than usual because it is nearer the center of the pelvis. The small fontanelle is near the sacrum. The caput succedaneum may be so large that the sutures are unreliable. In this event, locate the ear and feel the direction of the tragus. The ear will always indicate the direction of the occiput. If there is no disproportion between the head and the pelvis the treatment is expectant until an indication for interference arises. After complete dilatation occurs, if it seems the patient cannot deliver herself spontaneously, the head should be rotated anteriorly with the hand. Then forceps should be applied an episiotomy done and the head delivered. This is far safer for both mother and child than rotating the head with the forceps. One should not forget to catheterize the bladder before applying the forceps. The latter should not be applied before there is complete dilatation of the cervix.

For breech cases a policy of expectancy should be pursued. In multiparas very little trouble will be encountered; but in primiparas, there is a large fetal mortality and a high maternal and fetal morbidity. One should not interfere until the buttocks have been delivered over the perineum, unless a definite indication arises. In all primiparas if the baby is large, a deep episiotomy should be done. Great haste is not essential and care should be taken to avoid fractures. Pulling on the child's neck is very bad practice and may result in Erb's paralysis. Pressure on the child's head from above is the essential thing in the delivery of the after-coming head; but the pressure must not be exerted blindly. The head must be in the proper attitude before aid is given from above. If the head is in the pelvic cavity and difficulty is encountered, forceps should be applied to the head. Therefore, before doing a breech extraction or a version and extraction, a pair of forceps should be sterilized.

While it is generally advisable to pursue a policy of watchful waiting, one must not allow a woman to remain in labor too long. We should not wait to see what a patient can endure but simply what she can accomplish. To wait too long may mean death to both mother and child. On the other hand because the patient makes a great deal of noise or the family insists that something be done, do not interfere too soon. If you feel you cannot take care of the patient alone, do not hesitate to call for assistance. When any operation is to be performed in a home, always place the patient on a strong table. At the hospital we

have two Latin signs which translated read, "First of all do no damage" and "Not with strength but with art." These expressions should be kept in mind throughout all operative procedures. Here let me add a word of caution. There is as you know a widespread use of pituitrin in the first and second stages of labor. At the hospital if an interne orders pituitrin before the baby is born, he automatically submits his resignation. We believe pituitrin is a dangerous drug before the child is born and we prefer the application of forceps to the use of pituitrin. We can control the forceps but not pituitrin after it has been given.

In the second stage of labor and during forceps operations, the fetal heart tones should be counted every minute or two. This is easily accomplished by using a De Lee-Hillis head stethoscope which permits the freedom and sterility of both hands at all times.

Of the graver complications, in the short time allotted to me I can say very little. In placenta prævia, it is important to save blood all the time. One never can tell how much blood the patient will lose before delivery is accomplished. For placenta prævia in a primipara or in a multipara with an undilated cervix and profuse hemorrhages and a viable child, Cesarean section is advocated. Other forms of treatment are the use of a rubber bag and Braxton-Hicks version. The latter is the best procedure in a home. One should never do a manual dilatation of the cervix in placenta prævia; because while it is easily accomplished, it usually produces extensive lacerations which cause fatal hemorrhage. Transfusion must not be forgotten as an aid in the treatment of placenta prævia.

Eclampsia in the home is best treated conservatively. In a hospital either conservatism or radicalism may be practiced, depending upon the number of convulsions, the parity, the condition of the cervix and the size and condition of the baby. In the home, bleed the patient, give morphine hypodermically and chloral per rectum and force fluids, per rectum.

If a child is born asphyxiated, it is not necessary to use forcible means to resuscitate it. First of all, warmth is essential; hence wrap a towel around the baby. Then with a tracheal catheter, clear the child's pharynx and trachea of mucus and if respiration does not begin spontaneously, blow air into the lungs, but with extreme gentleness.

The management of the third stage of labor is much more important than most physicians realize; for more women die from accidents occurring in the third stage than during the other two

combined (De Lee). It is essential to distinguish the separation of the afterbirth from its expulsion. One should treat the third stage as follows: After the child is born, place the hand on the fundus of the uterus but do not massage. Wait until signs of placental separation occur. These are, (1) advance of the cord from the vulva; (2) rising of the uterus in the abdomen; (3) the change in shape of the uterus from a globular one to one with a sharp ridge at the fundus; (4) the uterus is smaller and harder than before. If after one hour the placenta does not separate, the Crede method may be used, first making sure the bladder is empty and the uterus well contracted. After delivery of the placenta and membranes, they should be examined for missing pieces. It is best not to invade the uterus for missing pieces of membrane unless there is profuse hemorrhage; for in a home, invasion of the uterus is a serious procedure. Never pull on the cord to deliver the placenta. If the placenta is adherent and a manual removal must be done, the strictest aseptic precautions should be taken. The gloves should be changed and it is a good plan to give the patient ergot during the first few days of the puerperium.

We generally give our patients pituitrin immediately after the baby is born and ergot as soon as the placenta is expressed. Since doing this, we have had very few cases of postpartum hemorrhage. If hemorrhage does result after removal of the placenta, and the latter is complete, the bleeding is due to either lacerations or to atony of the uterus. If due to lacerations, immediate repair should be done. If the bleeding is due to uterine atony, indicated by the flabbiness of the uterus, and pituitrin and ergot do not suffice, have someone give pituitrin directly into the uterine muscle through the abdominal wall. First bring the uterus up to the abdominal wall with a hand in the uterine cavity. Strict asepsis must be observed. As a last resort the uterus should be packed, and the packing removed after twenty-four hours.

When the third stage is over, the perineum should be carefully inspected for lacerations and if any are found they should be repaired immediately.

Before leaving a patient's home, the physician should assure himself that the mother and baby

are in good condition. The uterus should be firm, there should be no hemorrhage, the placenta and membranes intact and the mother's temperature and pulse normal. The child should be examined to see if it is breathing properly, if its color is good, its cord bleeding and whether fractures are present. The instillation of silver nitrate should not be forgotten.

During the puerperium the patient should be carefully watched especially for signs of infection. The diet should be looked after and the bladder and bowels should be kept empty. We usually give our patients castor oil on the second morning. The uterus should be palpated and the lochia observed. The breasts and nipples are to be watched and the latter kept scrupulously clean. Cracked nipples should be treated early by the use of tr. benzoin, silver nitrate or lead shields. Moderate bed exercises may be practiced from the third day postpartum. The baby must also be looked at, especially its cord, eyes and mouth. If it weighs over six pounds it is put on a four hour feeding schedule; but if less than six pounds it is fed every three hours or oftener. Breast feeding should be insisted upon if it is possible. If the breasts become engorged and tender, it is advisable to apply a tight breast binder and ice bags; but do not have the breasts pumped. If pus is present, drainage should be secured by incision and the baby should not nurse the affected breast. If a pelvic infection should arise, elevate the head of the bed, place an ice bag on the uterus, give ergot, force water and prescribe a saline purgative.

After discharging a patient it is advisable to tell her to return for a final examination at the end of six to eight weeks. At that time a pelvic examination will reveal whether involution has taken place, whether the uterus is retroverted and the result of the perineal repair if any had been done.

In closing, I should like to emphasize the present unnecessarily high maternal and fetal mortality and morbidity. Physicians can reduce this considerably by proper observation of their patients during pregnancy, by the proper management of labor and above all by the education of their patients. Effort in these directions will be well spent.

PROSTATECTOMY IN POOR SURGICAL RISKS*

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The evolution of prostatic surgery, changing it from a very formidable operation with a high mortality rate to a most gratifying one with but few fatalities, is chiefly due to the recognition and carrying out of some, until recently unrecognized, basic principles.

The aim of every conservative surgeon is to care for the lesion in such a manner so as to not only preserve life, but so far as possible to restore the function of the involved tissue to the extent that mental and physical comfort may be enjoyed.

The vitality of these patients suffering from prostatic obstruction, either partial or complete, is usually at a low ebb, a condition which often makes the problem presented a difficult one for solution.

As the obstruction may be due to (1) a benign hypertrophy or hyperplasia of the prostatic gland; (2) an abscess; (3) various types of inflammatory tumors, or (4) a neoplasm, it is of importance that the exact nature be learned as early as possible.

About 25 per cent of all prostatic enlargements and bladder tumors are malignant. Fortunately, the large percentage of the remainder are simple adenomatous over-growths without any neoplastic changes, a condition which is greatly responsible for the possibility of obtaining complete and lasting relief in such a large percentage of cases.

The development of the prostate gland begins in the third month of gestation by a thickening of the mesoblastic tissue around the Wolfian and Mulerian ducts in the region of the primitive urethra. The epithelium of the sinus-urigenitalis throws off three groups of buds on either side and as development proceeds, there occurs a differentiation into two lateral and one median group, which later form the definite corresponding lobes of the developed gland. Normally the prostate is extra-vesicular. It is penetrated by the urethra and the ejaculatory ducts. The canals are separated at the base by the median lobe, but they are united anteriorly at the situation of the vera-montanum.

In its course of development, the floor of the prostatic urethra becomes pushed up and results in a closure of the lumen. The enlargement is no longer only extra-vesicular, but becomes intra-vesicular as well.

It is further of interest to note that a uniform enlargement of all lobes is relatively infrequent. In fact, a marked adenomatous development of one lobe may cause sufficient pressure on an adjoining one to produce atrophy. Thus varied types of hypertrophy may occur. All this is of importance in the choice and extent of operation.

But the removal of the gland is not the whole solution of the problem. As a result of the hypertrophy the continuous urinary obstruction, either partial or complete, follows and produces other dependent lesions which further tend to deplete the vitality of the patient and to render operative intervention more hazardous.

Not many years ago the mortality from prostatectomy exceeded 20 per cent. Today it has been lowered to a fraction of 1 per cent and in the hands of many, it is almost nil. Advocates of the various operative methods meet on a common ground and recognize the great importance of proper preliminary preparation of these cases for operation.

Until phenol-sulphothalein¹ was brought into general use, no definite criterion of the renal function was to be had, but we are now able to quite accurately determine the degree of elimination present. Patients with impaired kidney function can readily be built up so as to become safe risks for surgical intervention.

Unless some preliminary guide is used, an injustice is done to the patient and the former disastrous results will continue to occur. We must not lose sight of the fact that the patient is advanced in years and consequently his normal degree of resistance has been perceptibly lowered. The loss of sleep, occasioned by the nocturia has further depleted his strength and the changes which have taken place in the whole genito-urinary tract and circulatory system, as well as in the remaining excretory organs, all tend to lower his resistance. If the obstruction is not relieved, his period of expectancy is on an average less than five years and in case a catheter life is used, this is reduced by one-half. A kidney sufficiency test often evidences a great variation of kidney function. In case the return yield reaches as high as 40 per cent during the first two hours, the patient's chances are comparatively good. But when 15 per cent and lower is returned, definite preliminary measures are quite necessary in order to avoid a serious outcome of the operation. To determine the function of each individual kidney is quite unnecessary. While a cystoscopic examination may reveal many points of interest, its repeated use in prostatic obstruction is not advisable because of the possible trauma.

*Read before the Des Moines Valley Medical Society at Ottumwa, Iowa, June 15, 1922.

Mechanical drainage of the bladder, which usually contains residual urine in varied amounts, proper hygiene, taking of large quantities of water and fluids, for a period of from ten to thirty days, or longer if necessary, helps to correct this faulty elimination. The general systemic condition must be cared for. Special attention should be given the often over-worked heart and circulatory system. Tincture of digitalis in doses varying from five to twenty minims, every four to six hours until effective is admirable for this purpose.

A high blood-pressure is preferable to an abnormally low one. When the kidney function has been reestablished and a stable pressure has been produced, even though it be as high as 200 mm. mercury, there will be no drop in either the systolic or diastolic pressure at the time of the operation.

The determination of blood sugar, blood urea nitrogen and other blood chemistry is of great value providing the findings are accurate. Unless carried out by an experienced technician, its real value is rather limited.

The choice of operation has long been a question of much dispute. Literature at hand affords many careful analyses of statistics and comparing the mortality rate of the suprapubic and perineal methods, the results seem to be slightly in favor of the perineal route.

However, this needs some explanation. If the statistics at hand represented the work done by men of equal preparation and experience, there would be no variation. The supra-pubic method is the more simple and as a result is too often attempted by many who are not qualified to do any type of prostatectomy. As a sequel, disastrous results have followed which tend to prove this method to be less advantageous.

Young's² recent report of 165 consecutive cases of perineal prostatectomy without a death, would seem to give additional proof and to remove all doubts as to the choice of operation. But he recognized early the necessity of a careful preliminary preparation, without which, these brilliant results would not have been possible.

The surgeon should be prepared to perform any operation indicated in each individual case. However, if any certain type should in his judgment be safer, or in his hands give better results, here as in every other instance, he should center his efforts on this special one and perfect his technique to the highest degree possible.

For several years I have been partial to the suprapubic route. The results obtained by this

operation have been most gratifying and until I have reasons to do otherwise, this will continue to be my method of choice. In every instance, a preliminary drainage either by catheter or through a suprapubic cystotomy, precedes the enucleation of the gland. Perhaps the most plausible argument favoring the suprapubic operation is that the external sphincter is left in-tact, while in the perineal, it is often injured. If the internal sphincter is injured, no serious harm is done.

Shock is more common following the first stage than the second. As a result of the suppression, the bladder becomes chronically distended and contains an increased amount of residual urine. Even in a patient who has been drained per catheter for one to three weeks, there is often a violent reaction upon establishing a suprapubic drain, showing that the suprapubic is more effectual than the urethral in that the patient will have recovered from the shock of opening the bladder before the enucleation is begun.

Carlson's and Luckhardt's work;³ on visceral sensory nervous system seems to be directly applicable and explanatory of the phenomena which follows the establishment of a suprapubic drain. To quote, "Of all the viscera in the abdominal cavity, the urinary bladder yields with greatest certainty on stimulation marked reflex effects on the heart and the vaso-motor system. In any animal in good condition and suitably prepared the mere touching of this organ may cause promptly a long lasting cardiac inhibition and arrhythmia with a lowering of the general blood-pressure. Such an irregularity and slowing of the heart may under certain conditions be even more pronounced and long lasting, than the inhibition effected temporarily by mechanical stretching the horn of the bladder. The more violent the mechanical stimulation of cutting a slit into the bladder may promptly complete cardiac standstill with drop in the general arterial pressure. Mechanical distention of a rubber balloon in the urinary bladder gives the same phenomena."

A chronic overdistended bladder as found in these prostatics brings into play a new mechanism, so that a sudden collapse of this bladder would tend to produce similar reflex phenomena on the heart and vasomotor system as would a sudden distention of a normal bladder. Therefore it is of importance in establishing a suprapubic drain to permit only a gradual emptying of the bladder. This can readily be arranged by closing off the tube at intervals, permitting only a limited quantity to be drained off until it is apparently safe for continuous drainage. If the bladder is freely opened and the gland removed at

the first operation, this safeguard is impossible, should an emergency arise.

Under local anesthesia of 0.5 per cent novocain, the bladder can readily be exposed. The bundle of suprapubic fat is best removed as far as is possible. The peritoneal fold covering the fundus of the bladder is pushed back.

The bladder which has been filled with boric acid or other similar solution prior to the operation is now easily brought into view by two properly placed tension sutures. If air be substituted for fluid, the field of operation will be less soiled.

A purse string suture is placed in the bladder wall high up, near the fundus, and in the center of this circle is made a stab, into which is immediately inserted a mushroom catheter, stretched over an introducer. The catheter which expands and entirely fills the stab opening, is made doubly secure by tying the purse string sutures. Thus the bladder which still contains fluid can be emptied as desired and as the condition of the patient permits.

During this period of drainage the patient is urged to take large quantities of water and fluids. The bladder should be irrigated morning and afternoon, daily.

The use of urotropin in 5 gr. doses at six hour intervals serves a good purpose. The patient remains in bed from twenty-four to forty-eight hours when he is urged to be up and about several hours daily, for aside from aiding his circulation and general physical condition it has a tendency to improve his general morale and buoy up his spirits. A depleted kidney function can thus be raised and be made to remain stationary.

There are four important points favoring a preliminary suprapubic drainage.

1. It is more effectual; the bladder can be emptied gradually thus preventing shock and uremia.

2. The bladder wall can be rendered free from former inflammatory processes.

3. The eliminative function of the impaired kidney can be restored and the general vitality raised.

4. The field of operation is rendered immune and makes the period of healing from the later operation more effective.

When a stabilized condition has been reached, be it six to thirty days after placing the original drain, the patient is usually in an excellent condition for prostatectomy.

Under gas oxygen or ether, or spinal anesthesia, if the case warrants it, the wound is reopened. As the preliminary drain serves as a guide, the sinus present is readily enlarged for the completion of

the operation. I prefer an opening large enough to bring the prostate into view. Speed is not necessary. With the index finger of the left hand in the rectum, the gland is pushed up and becomes accessible to the operator.

Should perchance the bladder contain a stone, this is easily ascertained and removed at this time. By manicuring the nail of the index finger to a point, a valuable aid for entering the so-called capsule is at hand. After locating the prostatic urethra, it is forcibly divulsed with the tip of the index finger, and the capsule is opened by cutting with the pointed finger nail, and using care so as to avoid unnecessary trauma, the several lobes may be enucleated, either en-mass, or separate depending upon the type of enlargement present.

Immediately after the removal has been completed, the space formerly occupied by the gland is obliterated. This is accomplished by placing the two raw surfaces together after which firm compression is made by the two fingers covered with gauze. The muscular elements tend to contract with the result that hemorrhage soon subsides. An intramuscular injection of 20 c.c. of a 25 per cent solution of sodium citrate is often beneficial to increase the rate of coagulation.

Through the retained urethral catheter is run quantities of boric acid or normal salt solution at a temperature of 105 F. The catheter is held in place by fixing it with a plain 00 cat-gut suture, passed through the eyelet and sutured to the edge of the sinus in the bladder wall.

After hemorrhage has been amply controlled a rubber tube, one-half inch in diameter is fixed into the sinus and the bladder is then closed. Care should be used not to permit the drain to penetrate into the bladder far enough to allow the end to come in contact with the site of the enucleated prostate, as the resulting irritation may be sufficient to produce tenesmus.

If, however, hemorrhage does not subside readily by these methods, others must immediately be resorted to. Too much emphasis cannot be placed upon the necessity to control hemorrhage. These patients can ill afford to lose much blood. Many a death attributed to uremia is in reality caused by hemorrhage. Whenever the case shows any indication, an immediate transfusion of whole blood is imperative. This will save lives which otherwise would be sacrificed.

The use of a Pilcher tube and bag, filled and properly placed so as to cause pressure on the field of operation may serve a good purpose, but I do not advocate its use as a routine.

After the patient has been returned to his bed, the head of which is raised on 8 inch blocks for

the two-fold purpose of obtaining better drainage and to prevent the possibility of a hypostatic-pneumonia; irrigation with a normal salt or boric acid solution at a temperature of 105° F. is repeated every alternate hour for the first twelve hours. A 5 per cent glucose solution proctoclysis is given continuously every alternate hour for the first thirty-six hours. After the first twenty-four hours the return flow or drainage from the bladder is usually clear and the patient is quite comfortable. He is now urged to take liquids in large quantities.

Ample support of the scrotum, is imperative. As the seminal vesicles are usually infected in these cases, this precaution is of great importance and helps to prevent the contained secretions from being forced into the vas which in turn would be sure to cause an unpleasant epididymitis.

The occurrence of an embolus following prostatectomy is a discouraging sequel. The patient seldom if ever survives. The treatment is purely symptomatic.

The patient is urged out of bed into a wheel-chair as early as possible, if advisable on the third day. As a rule the urethra functionates after the first week, when the suprapubic drain may be removed. The catheter should be removed on the third day. The wound is usually healed at the end of the third week. If, however, drainage through the wound continues over this period, I do not attempt to hurry closure, for I am convinced that a longer period of healing does no harm, but quite the reverse.

SUMMARY

A safe prostatectomy can be performed on patients with a low vitality due to old age, advanced cardiac or renal complications after determining the degree of elimination and vasomotor disturbance, by improving the general condition of the genitourinary tract and vasomotor system and by giving special attention towards restoring the normal vitality during the step by step procedure of a two stage operation.

Hemorrhage must be controlled at once in order to prevent shock and uremia.

Following the operation, any disease peculiar to old age must be guarded against as far as possible.

The frequency with which embolus occurs in these cases must not be overlooked.

The improvement of the general morale by urging them out of bed as early as warranted, has most beneficial effects.

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NARCOTIC DRUG ADDICTION AND NARCOTIC LAWS*

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The history of the relation and connection between narcotic drug addiction and narcotic laws is the history of the struggle for presentation and consideration between the scientific and clinical facts and literature of opiate drug addiction against the influence of various generalizing declarations from all sorts of sources from the promoter of the advertised specific cure institution or treatment to the fanatic, "uplifter," political appointee or other promoter of a "panacea," medical, pseudo-medical, legislative, administrative, or otherwise.

I say "opiate drug addiction" because it is recognized by all who have made any sort of competent study of this matter, that cocaine, alcohol, the various coal-tars, hasheesh, etc., are conditions and problems of entirely different character.

It is a fundamental misfortune that many of those who have drafted narcotic laws, or who have periodically been in control of their interpretation and administration, or who have indulged in generalizing publicity, or advertised widely one or another particular method or routine of "cure" or "treatment" or "remedy," have lumped under a most undescriptive title of "Habit Forming Drugs," substances of widest dissimilarity of action and reaction.

It is one of the examples of the utter confusion and chaos into which incompetent generalization and careless or ignorant use of words and phrases and definitions has thrown this whole subject and the making and interpreting and applying of its laws.

In the report of the special committee on narcotics of the section on foods and drugs, American Public Health Association, (*American Journal of Public Health*, January, 1920), this matter is clearly gone into, as well as discussion of other vaguenesses current in the use of names and nomenclature and responsible for much of existing

*Address before the Tri-State Medical Association, Peoria, Illinois, November, 1922.

confusion and failure of remedy and of understanding and rational and uniform interpretation and administration of so-called "narcotic laws."

This report, written by Dr. Charles E. Terry, chairman, and his committee after years of its existence and study, is in the opinion of many the best concise summary of the fundamental issues, and facts and needs of the narcotic situation yet presented in official report.

It reflects the ideas and knowledge, which had come to be axiomatic with the older administrators of the Harrison Act under its administration by the Bureau of Miscellany, and the conclusions of the two years' legislative committee (Whitney committee) investigation in New York state, and the general analysis of the men of experience.

It is in the opinion of many the best concise summary of the fundamental issues and facts and needs of the narcotic situation yet presented in official report.

It was reprinted in the Illinois State Medical Journal, October, 1921.

This report is important historically and chronologically in that while it epitomizes and summarizes the concepts of the narcotic matter and its problems as those concepts had grown out of the years of experience and experiment in New York state and elsewhere and in the Harrison Act enforcement, under the Bureau of Miscellany—it appeared at about the time that the enforcement of that act was turned into the hands of the newly created Prohibition Bureau, and was practically reversed in the meanings and interpretations which it had come to have.

This report is also historically and chronologically important because soon after its publication, appeared the report of another committee—upon whose type of presentation the Prohibition Bureau seems to have based the policies and "opinions" and "rules and regulations" which have dominated for the past three years.

This committee referred to as typical of the dominating influence for the past three years, was a committee appointed in connection with the Council of Health and Public Instruction of the American Medical Association, during the presidency of Alexander Lambert. In its reports it reflected and revived the earlier tenets and formulated dicta of the type of those coming from Dr. Lambert's associate in the Town's institution and treatment, upon which the then discarded New York State Boylan law had been based and it is claimed, promoted.

The interlocking of this committee personnel with the personnel of other committees in New

York and with certain administrative appointments in New York City and state and their relations with the newly created Prohibition Bureau officials as shown by Congressman Volk and elsewhere, gave to the reports and announcements and opinions and definitions, etc., of the type of those of this Harris committee, tremendous dissemination and publicity, and official recognition in narcotic administration.

This committee apparently ignored the clinical and scientific literature and record of previous experiment and experience—and with its associates centered its activities and influences and announcements upon a few generalizations which had been thought to be discarded by the experience and investigation and experiment of the past.

The successors of this committee under Dr. Haven Emerson followed and reiterated the premises of the Harris committee.

As shown in Dr. Terry's paper "Some Recent Experiments in Drug Control," read at the narcotic symposium in San Francisco in 1920, September, and printed in the American Journal of Public Health January, 1921, the whole matter of the narcotic law enforcement and interpretations boils down to whether the administrators of laws adopt the premises of the group whose claims are typified in the Harris and Emerson committee reports, or whether the problems outlined in the report of the Terry committee and many other places are to be given consideration.

It must be realized that narcotic laws, have followed the increasing custom of leaving interpretation and administration to some "commission" or "department," with wide powers of "rule and regulation" making.

Attention to this is called in my book "The Narcotic Drug Problem" in the chapter on "Laws and Their Relations," in which is stated, "Those who are responsible for our laws should remember that the possible interpretation and administration of the laws they draught are very important considerations, and determine the real effect of the laws often more than does the real intent of the makers."

It is interesting in passing to note as a historical incident that I wrote this book after the urgings of the administrators under the Federal Department of Miscellany, and that its contents were opposed by those who apparently controlled in influence over the administration of the Prohibition Bureau when it took over the enforcement of the Harrison act.

So that the Harrison act under the prevailing opinions of the Prohibition Bureau administrators

were diametrically opposite to the opinions of the Bureau of Miscellany administrators.

Also the Harrison law has been diametrically opposite in its meaning and force and effect under the "opinions" and "rules and regulations" and administrative "decisions" of the Prohibition Bureau, to what it was under the Bureau of Miscellany up to three years ago, in so far as it concerned the practitioner of medicine.

A similar phenomenon occurred at about the same time in the New York state law and "commission," and also in the Pennsylvania state law, and "Commission." Both "commissions" practically reversed the intent and purposes of the laws and commissions as shown in the transcripts of the hearings and reports upon which the laws were framed and the commissions planned.

As has been repeatedly and clearly pointed out, they were reversed through "administrative rules and regulations," in New York state giving the administration of the "commission" all the force and effect of the Cotillo bill, which was the overwhelmingly rejected opposite in force and effect. This is mentioned in my paper in the Medical Record, December 3, 1921, "The Neglect of the Narcotic Drug Problem." It is interesting in passing to note that just prior to the attempted passage of the Cotillo bill, prominent medical men who had helped to block previous similar legislation were indicted by an assistant United States district attorney, who appeared at Albany with the group promoting this Cotillo bill, and that later the force and effect of the Cotillo bill was carried into prohibition "rules and regulations."

All of this was made simple of accomplishment by the fact that clinical and scientific men of recognized medical authority were muzzled and suppressed through indictment brought by an assistant United States district attorney who was among the proponents of a partisan piece of attempted local legislation, indignantly condemned and repudiated by medical and lay press and overwhelmed in legislative hearing.

Concerning this bill, the report of the legislative committee of the New York State Medical Society says, New York State Journal of Medicine, June, 1921, "The Cotillo bill, which had been in one form or another presented to the legislature for seven or eight years" (since the activities of Towns and the Boylan bills), "was withdrawn by its introducer after a hearing at which the senator scathingly arraigned the persons who asked him to introduce it and practically accused them of deceiving him as to the motives behind the bill."

Among the people opposed to this Cotillo bill

were the judges of New York state, who protested against and demanded an open hearing upon it in a telegram from which I quote from the transcribed testimony.

This telegram concerned the Cotillo or Fearon bill (1920-1921) and I quote from it as follows:

The bill referred to would utterly destroy the constructive work of five years and legislation—including two years intensive study by joint legislative committee.

Forbidding doctors to prescribe would threaten public calamity.

Thousands of addicts would be without means of immediate treatment, which mere administering could not alleviate.

Existing hospitals could not cope with the number forced to the necessity for immediate custodial treatment nor new hospitals provided quickly enough to meet the situation.

The underworld and illicit traffic would find new and appalling impetus and violations of the criminal law both as to narcotics and incidental crimes vastly increased.

As I said before, in spite of the overwhelming exposure of the fallacies and claims and probable motives behind such legislation and the undoubted menace and effect of it as repeatedly previously recorded, it was carried into effect through state "rules and regulations" and later into effect through "rules and regulations" and "polices" and opinions of the Prohibition Bureau.

Few warnings have been so completely and calamitously fulfilled as that of the judges of New York state against the Cotillo bill, and the discussion of it and its effects in the report of the legislative committee of the New York State Medical Society above quoted.

The history of these things is little known among doctors, especially outside of New York state, but it is the history of the development of the existing narcotic drug situation, with all its terrorism of and jeopardy to honest medical men, and its torture and harrassment of the innocent addicted, and its fostering of smuggling and peddling (and the official corruption appearing in the press), and its spread of addiction among the youthful and curious and ignorant through the extension of business of "underworld" commerce stimulated by morbid and sensational and misleading publicity, and by the diversion from and suppression of reliable clinical and scientific study and work and education.

You men of the West who are puzzled by the obvious clinical absurdities of some of the Federal "rules and regulations" and official opinions and decisions, cannot practically understand them un-

less you understand the mechanism of their origin and development—much, if not most of which is written in the narcotic development history of New York state and district and county.

The national situation is so easily traceable through and as being a development from and extension from certain activities and influences in New York state, and narcotic law interpretation through "rule and regulations," etc., has of late been so dominated apparently from New York state medico-political and other influences, that the record in that state becomes the key to the federal situation, and existing conditions in general.

It would be impossible in the space of a paper to show the vast amount of record in the eight or ten years struggle between the misleading generalizations of the various panacea promoters and the literature and students of clinical and scientific medicine for legislative and administrative recognition in connection with narcotic (opiate) drug addiction and narcotic laws.

The predicament in which the medical profession finds itself in considering and dealing with its difficulties in this narcotic matter and in other matters which are coming more and more to vex it and hamper and impede its work and progress, is a psychological one. It has to a considerable extent been kept in ignorance of the data of the real issues at stake and the real struggles which have gone on. Itself, by training and experience, accustomed to the evaluation and application of existing clinical information to individual and type indications, it does not realize the tremendous force exerted upon the public and upon some public officials by broad generalizations and over-emphasized incidentals widely press-agented and insistently presented to the exclusion of all other considerations.

Senator Lenroot, in his speech before you, earnestly warned you against the power and influence and activities of "groups" and "cliques" and "special interests," highly organized minorities, persistently attacking legislation and administration with all the skill and force and psychological influence of the methods of modern press-agenting and trained salesmanship in the promotion of particular ideas or ends which may be utterly at variance with the broad survey of general knowledge and experience.

I cannot too earnestly urge upon the medical profession the recognition of this warning and the practical meeting of it by the medical profession and its organizations and journalism in the only way in which this propaganda can be combatted—which is by counter-propaganda for all

the facts and truth and clinical information in terms and force which legislators and administrators and the lay press can understand and apply and must recognize in the influencing, making and interpreting and administering of laws influencing clinical and scientific practice and progress, of which the narcotic laws are the most widely known example in which the record of machinery and cause and effect is recognized and traceable.

Senator Lenroot also told you another fundamental truth to which perhaps few medical men have given thought, but which those of us who have been forced by special experience or knowledge or recognition to participation and association with legislative and administrative forces, realize—

Senator Lenroot told you that legislators and administrators were just like other men—a part of them dishonest, a part of them unintelligent, the great majority of them uninformed on technical matters, affecting the scientific professions.

Our great problem is whether their information is to come from the "groups" and "cliques" and "special interests" and sensational publicity which accompanies the so-called "drives" for much of the "control" or "uplift" or "reform" legislation and interpretation and administration,—or is it to come from clear presentation of broad survey of all the facts of the condition and the difficulties and problems of those who must handle it in its various phases and aspects.

Is it to come from misleading and impossible generalities or is it to come from broad presentation of literature and facts.

As Senator Lenroot very practically told us,—it is up to us medical men, and to our officialdom and committees and journalism, to analyze and find our real issues and to inform and direct legislation, interpretation and administration, and combat "clique" or "group" or special interest influence or emotionalism or sensationalism. Otherwise legislators and administrators and the press and even many of the medical profession are deprived of full knowledge and of sound basis for competent judgment and decision and action. This is discussed in my book "The Narcotic Drug Problem" and in many other places.

From many places also of informed utterance and record is to be found warning of another danger within our own organizations.

This is the danger of incompetent or misleading or partisan reports coming from our own organization officialdom, and committees, or inactivity in investigation and inquiry and survey on the part of these officials or committees.

In New York district this situation was recognized and protested against in the official report of the New York State Medical Society, 1921, as follows:

Various committees that have been appointed by national and state bodies to "investigate" these subjects (narcotics and alcohol) apparently have had as their foremost requirement for membership thereon the proof of lack of experience with the subject to be considered by them and their reports have always been entirely standardized and apparently written ad hoc by an interested group comprising not more than ten men in the medical profession and a couple of lawyers. Their investigations have not been unbiased, their findings have not been judicial, and their reports have largely been ex parte formularizations.

Following the reading of this report the chairman of this legislative committee was elected to presidency of the State Society, which however, made no difference in the personnel nor character of announcement or activities or promotions connected with some of these "committees."

It was recently admitted in an open meeting by the chairman of one of these committees that they had paid little or no attention to clinical literature and record and experience.

I am as you may appreciate, in touch with most of the clinical students and writers on this subject from a scientific standpoint—and so far as I know none of us or our collections and libraries of data have been consulted by them.

Indeed, it is even possible, that the attacks upon and attempted suppression of some of us and our clinical record and experience may have been accomplished with the knowledge, at least, of some of this officialdom, which was promoting the "formularizations" referred to in the New York State Medical Society report, and trying to have them replace clinical literature and experience as a basis for the making and interpreting of narcotic law, in its application to the medical profession and the honest and innocent addicted sick.

I know that similar effort had been made before when the Harrison act was under the administration of the Bureau of Miscellany, but had failed with the older administrators who had made serious study of the condition and situation and were familiar with its various angles and phases and problems and facts.

The attitude of these experienced men who had no formulae nor affiliations, and their desire to encourage the medical profession to engage upon and solve the problems of clinical medicine involved, is presented in an article by "a government official" in *American Medicine*, December,

1917, a year which marked the close of the first year of the Whitney investigation by New York state and its preliminary report, which is also to be found in the same number of *American Medicine*.

The years of the administrative holding of this attitude and this interpretation and application of the laws were marked by advance in clinical study and education and in steady growth of competent clinic and hospital facilities—and as has been repeatedly pointed out in highest places, medical and lay and judicial and administrative—by the rapid diminution almost to the point of disappearance of the "underworld" smuggling and peddling traffic and the making of new addicts through the extension of its business.

The advent of the Prohibition Bureau in administration of the Harrison act, and its adoption of the "formularizations" type of interpretation and regulation-making, and as shown in Congress by Doctor Volk,—and elsewhere its close association with some of the influences behind the Cotillo bill—marked a complete reversal of this situation and of the force and effect of the administration of the laws.

As will be seen from the record—the Cotillo bill was promoted from among the "committees" discussed in the New York State Medical Society legislative report above quoted, and from the New York City Department of Health whose narcotic activities interlocked in personnel of control with some of these "committees." This is to be seen in Congressman Volk's speeches and other places of open record.

Following the discussion of the Cotillo bill which I have quoted earlier from the New York State Medical Society report as being a continuation of the type of legislative and interpretative effort by Mr. Charles B. Towns, and as having been repudiated by the senator who introduced it, is a discussion of the inevitable results and effects of this type of legislation and interpretation as brought out at the hearings upon it and as warned against in the telegram from the judges of New York State before quoted in this paper, and also in much medical and lay press protest at the time of the attempted passage of the Cotillo bill.

The report from the New York State Medical Society summarizes as follows:

Where the scheme is not horrible and inhumane, it is ridiculous and at the same time sinister.

The report then continues in warning and prediction against further promotions of the same "scheme," in whose fulfillment you men of the West as well as the doctors and sick of the coun-

try have become concerned and by it affected, as follows:

The bill is not a local one. A studied attempt is being made to effect it into law in many states, and an earnest effort is being prosecuted to have the regulations promulgated by the Federal Bureau having charge of the Federal Harrison Act to give that act the same force as this bill (the Cotillo or Fearon Bill) would have if it became law.

In other words, to have the effect of completely eliminating the considerations of clinical medicine and therapeutics and forcing all discussion of these matters into the channels of legal or pseudo-legal technicalities and quibbles on a basis of such premises laid down in the "formularizations" from the "interested group," comprising not over ten men in the medical profession and a couple of lawyers."

Or in effect to make this matter as it applied to the practitioner of medicine and the honest and innocent addicted, subject to the manipulation of publicity and politics (medical and lay) and statistical or other generalizations, from without the realm of the general practice and study of the problems and conditions of clinical medicine and scientific research which were so urgently requested and fostered by previous administrative policy and experience.

Illustration of vicious formularization is the definition of "ambulatory" treatment which became current. It has no clinical or scientific sense or significance, but is useful in propaganda.

Historical development of the situation is to be found in the Druggists' Circular for October, 1922. The druggists' organizations were aroused by a so-called "conference" held in March, 1922, for the stated purpose of appointing a committee to draft another "model" state narcotic law. The officials and committees of the druggists' organizations began to study into the history and data of the subject in which they were being regulated. This study has been followed by expressions and publications which will repay the perusal of the medical profession.

It seems possible that in the 1922 "model" state narcotic law, coming apparently from those connected or associated probably with some of the "committees" referred to in the report from the New York State Medical Society, and in whose drafting is represented an organization known as the League for Drug Control—may be fulfilled the prediction contained in the New York State Society Report that an attempt would be made to "effect it (the Cotillo bill) into law in many states."

The practical question then for medical men is

contained in the speech to you by Senator Lenroot. Whatever may be the motives or purposes, is it wise to permit concentration of power and domination of presentation of complex scientific and sociological matters, many of whose problems and difficulties are as yet unsolved, to fall into the hands of particular "groups" of individuals? And with this, its inevitable corollary, the menace of possible "group control" over "rules and regulations" making in a "commission form of government."

Are laws to be interpreted and administered in the light of all available information and facts and problems and difficulties or upon the basis of certain "formularizations" into whose origin and reliability and qualifications there is no present way of compelling investigation before adoption by administrative officials?

Under such conditions, there are no laws. There is merely administrative opinion written into "rules and regulations."

And the activities of the situation become distracted from the consideration and solution of the problems and difficulties confronting the practitioners and the workers and the sick, to the mad scramble to dominate or check in administrative consideration, in publicity, in political appointment or election (medical and lay) in accordance with the aims or ends or opinions or interests of conflicting "groups" or "cliques." It is such a chaotic state of affairs which has caused existing conditions.

In such a state of affairs, literature and record and calm review of conditions and facts is always impossible in competition for presentation with specific "generalities" or sensational incidentals. The newly appointed administrator or the editorial staff of the press have no way of going behind the statements made by apparently reliable officialdom or appointed "authority." I have discussed this matter in my paper "The Administrative Handling of the Narcotic Addict—Its Benefits and Dangers," (American Journal of Public Health, January, 1920). As Senator Lenroot stated, too many of them must exercise their judgment uninformed of all the facts. And yet upon these judgments may hang for years, in rules and regulations, later transformed into laws and court decisions, the possibilities of progress and remedy and solution of technical problems affecting the scientific professions and the sick and the public.

And for broad and fair review of situations so created or affected, the medical profession does not seem to have in existence competent or disinterested or adequate machinery, for the expres-

sion or protection of its general information or opinion, or rights or privileges or duties to develop its resources and apply them in the relief of the sick and the welfare of the public.

Example of this is also to be seen in the alcohol therapeutic restrictions, where a small group of individual doctors are said to have gotten together to make legal protest against what the medical and pharmaceutical professions regard as unwarranted and dangerous and unreasonable restrictions in the therapeutic use of this medicinal agent. Such a move should not have been left to an individual or a collection of individuals. It should long ago have been the subject of protest from medical organizations.

That the organizations are awakening to the facts of the situation is obvious from the last convention of the American Medical Association and the resolutions there adopted and the speech of the speaker of its House of Delegates (Journal of the A. M. A., May 27, 1922), as well as from the record of many other organizations, medical, pharmaceutical and otherwise.

In other words clinical and scientific medicine and other scientific organization forces are beginning to awaken and realize the facts of the situation in which their members find themselves hampered in their work and efforts to minister to the sick and suffering.

The individual physician cannot compete financially alone in courts of law, with the opinion of administrative officials backed by the financial resources and machinery of state or federal government.

If review of rules and regulations and provisions as demanded by the group of doctors bringing the suit against the alcohol therapeutic restrictions is needed—how much more it is needed in the case of the narcotics as applied to the needs and sufferings of the innocent sick?

One thing which has led to much confusion is the use of the word "law" in reports and publicity, where the matters discussed resulted from administrative rules and regulations and opinions.

An example of this is seen in a report signed by Dr. E. Elliot Harris, appearing in the New York State Medical Journal, April, 1920, and used in support of the Cotillo bill.

Dr. Harris speaks of the "law" then in force in New York state as having had a "fair trial." This would dangerously mislead the uninformed, as is shown by the statements coming from the judges of the state through Judge Collins and showing that the "law" itself in its original intents and purposes had never been enforced and that the rules and regulations (federal and state)

had been calamitous in their results—in some instances going so far as to "practically repeal the law" itself—and to revive smuggling and peddling and drive practitioners of medicine and pharmacy from their "legitimate" work in connection with this matter.

It is also pointed out through the judges, that the organizations of medicine and pharmacy had their legal redress in the control of extra-legal administrative activities and rules and regulation making.

Of these things Dr. Harris seems to have been ignorant and not to have informed the profession, through his various "committees."

This matter has been widely discussed, among other places in the Illinois Medical Journal of October, 1921, which quotes an important communication from Judge Collins, himself, and an editorial from the Medical Record.

The realization and practical appreciation of this is the key to the untangling of the existing muddle of various opinion and "regulation" and promotion and publicity which constitutes the foundation for and machinery of development and continuance of the present narcotic drug situation.

Unfortunately each new administrator, medical or lay, tends to start with the conceptions which all of us probably had at first, of the narcotic or opiate addicted being a class of degenerated or criminal tendencies, and the problem being one simply of control.

In my early experiences in the narcotic and prison wards in Bellevue Hospital I myself followed this theory and concept.

My awakening came as a result of two things:

1. Failure of measures based on this theory.
2. Deaths of opiate addicted patients as result of opiate deprivation without clinical understanding and skill.

You will not find these things recorded in the statistics. For one reason I did not know or realize for some time that these deaths were resulting from opiate deprivation. I had simply followed the then prevailing teaching that opiate addiction was simply an indulgence or "habit." I later realized that people did not die from "habit." They did not die often enough to get the "habit." So that that part of my experiences had to be explained in some other way, which was what really started me on my clinical and other studies in this subject which became my scientific hobby.

I then started to study on a basis of observing facts instead of generalizing on a basis of words, a process which it has seemed this matter as a

whole periodically goes through, with change of administration medical or lay, or following the promotion of each new panacea sufficiently backed to secure publicity and recognition.

The last three years have been a remarkable demonstration of a succession of these processes, one after another demonstrating their futility and failure and now it is to be hoped coming back to sanity and the consideration of problems and conditions and scientific and clinical literature and experience and fact.

The sensational publicity which has been secured for some of the morbid or "underworld" or degenerate types of individuals addicted, and for the exploits of the "underworld" smugglers and traffickers and so forth has constituted in effect a camouflage or "smoke-screen" or distraction and has allowed certain issues of this matter to be "ballyhooed" at the expense and to the practical elimination of problems and needs of serious and important consideration.

It is a coincident that each of the "drives" for the type of legislation or interpretation which has dominated for three years has been preceded or accompanied by this same sort of sensational publicity, and the suppression of consideration of the literature and record and experience of clinical medicine, and previous sociologic and economic and public welfare experience.

Formularizations and generalizations lend themselves to ballyhoo and exploitation, and presentation and application to absurd and dangerous ends and deductions. It is abortive of real remedy and real progress and real control.

Nothing has been more repeatedly demonstrated as a matter of overwhelming record than this last statement has been in the history of the narcotic drug and narcotic law developments and situations.

Sooner or later, after each one of these "drives" or "panacea" promotions based upon a few statements or words or phrases or as the New York State Medical Society report calls them "formularizations," there has had to come a taking account of stock.

The real question is, have the methods of administration and publicity and control of the past three years fulfilled the promises of their proponents, or have they fulfilled the warnings of the predictions expressed at the Cotillo bill hearings and elsewhere?

As Doctor E. H. Williams states in the introduction to his book, "Opiate Addiction," have all these strenuous efforts and widely press-agented presentations and plans left out of consideration some fundamental elements without whose under-

standing real remedy and solution and control and progress is impossible—among the most important of those elements being the clinical and scientific study of the matter being dealt with.

In the 1919 report of the special committee of the treasury, and in the reports of the New York state legislative investigation, and in the reports from the judges committee of New York state, and the reports from the American Public Health Association, and in endless amount of medical and lay and legislative and other hearing discussion is found recognition of the fact that many of the basic problems of the condition most concerned in these narcotic laws are still unsolved, and that application of what knowledge exists is still not widely known or practiced, a direct result of the ballyhoo of sensational and morbid incidentals.

Survey of the literature and record and report and discussion shows that the public institutional treatment and much of the private institutional treatment of this condition of opiate addiction has failed, and that the mere using of the words like "after-care" and the expressions indicating degeneracy or perversion which apply to some cases or individuals addicted or unaddicted, and the reiteration of the wiles and stratagems of the "underworld" peddler, will not longer distract from nor furnish alibi for the fact of this failure, in clinical and therapeutic result. (See New York state prison commission report, 1922, etc.) (Whitney investigation, Cotillo bill hearings, etc.)

In both medical and lay press is again more and more coming back into consideration the innocent and honest types of individuals afflicted with the condition known as opiate addiction and the problems and difficulties and harassments under which they and their physicians labor.

There is less and less in the press today about the sensational aspects of the "underworld" manifestations, agreed by all competent people to be a problem entirely dissociated from the needs and problems of the honest and upright. How much of this "underworld" and "criminal" sensational publicity has been reflection from actual conditions, and how much of it has been press-agented in propaganda or promotion for special ends, etc., will never be known.

A letter to me recently from an official in the Health Ministry of Canada, shows the realization of how this sort of publicity reacts in the spreading of the conditions which it ballyhoos.

As a definite proposition, going beneath all the definitions and phrases and words and formulae which have prevailed in much publicity and some places of administration and some report for the last three years, are our laws being framed and

interpreted and administered on a basis of propaganda, promotion and ballyhoo or on a basis of survey and study and correlation and application of all available information and fact and material and literature and the experience of clinical and scientific medicine?

That seems to be coming again into appreciation as the real issue underneath all the confusing and kaleidoscopic reiterations and discussions and promotions and controversies.

If you are going to understand the development and remedy for the situation existing in relation to narcotic drug addiction and narcotic laws you must get to look at some part of it as a result of ballyhoo. You can understand it in no other terms.

Our problem is are our laws to be made and interpreted by ballyhoo for personal or group opinions or promotions, or are they to be made and interpreted by application of medical and clinical and scientific basis for sane and practical remedy?

Which leads up to the solution:

1. Stop the Ballyhoo and exaggeration and sensationalism.
2. Bring back clinical and medical and scientific study and education.
3. Separate the situation into its various component problems, and do not try to make any one set of formulae or definitions or regulations apply to every problem that comes up. (It can't be done. After the past three years this should have been learned if nothing else is to be gained from experience and experiment.)
4. Make those concerned with each phase or problem make and keep themselves competent—and stay on their own jobs.
5. Hold officials (medical and lay) responsible for the reliability and competency of what they say or do and for the result and effects of it. (Political appointment should not confer immunity to information responsibility and competency.)
6. Keep officials (medical and lay) from engaging in partisan promotion.
7. Keep medical profession as a whole fully informed of facts and of all available information, and current events and issues.
8. Analyze causes for failure of recent activities and policies and experiments, administrative and otherwise.
9. Force recognition of and application of full and equal exposition and consideration of all material and facts. Keep legislators and administrators informed of them. Most mistakes are made through pure ignorance due to lack of information.
10. Get rid of all misleading or incompetent or meaningless or false generalities—and replace them with knowledge of literature and record and experience

and fact, in the handling of conditions and the interpreting and administering of laws.

These are real useful jobs for our administrators and officials, medical and lay, and for every journal editor, and for every practitioner of medicine who is interested in the future and progress of his profession and his science and art.

The need for this applies not only in the narcotic matter, but also in other fields of medical and lay uncertainty and changing conditions and turmoil complicated by incidental controversies and quibbles.

All other methods than this have failed, and have aborted remedy and progress. No royal road, no "panacea" has been or ever will be found for a complex situation involving many problems.

If a true slogan is needed, make it "less generalization, less quibble, less ballyhoo," and "more competency, more work, and more education!"

It is a serious impeachment of our times and conditions that it has been necessary for you to have to ask me to take up this hour in a talk on the forces and conditions and laws and regulations surrounding the subject of narcotic addiction as it concerns the practice of your professions, and the problems of your afflicted patients.

But it is by such things that clinical and scientific work has been driven out. And the scientific professions are "milling around" like sheep for lack of understanding of these things, into consideration of which some of us who have devoted years of study to clinical and research work and experiment have been driven in our own protection and the protection of our work and our profession and the innocent sick.

I wish I might have talked on this clinical and research work forced to recent neglect and abandonment. Some of you have asked for it, and cited cases illustrating your need for it. I can simply tell you that available for development and teaching lies to hand much of clinical and research application and therapeutic value, that if possible of general teaching and development should early solve the physical problems of opiate addiction, or as the French call it "chronic opiate intoxication." Of the chronic conditions, as soon as general interest and clinical work and education is again made possible, opiate-addiction will become one of the most generally controllable and arrestable and preventable. It can only be done, however, through clinical and research understanding and work and education. The advocated panaceas have all failed. The relief of the present and the hope of the future lies in clinical medicine.

EARLY PHYSICIANS IN IOWA

D. S. FAIRCHILD, M.D., F.A.C.S., Clinton

DR. CHARLES HAMILTON RAWSON

Dr. Charles Hamilton Rawson was born in Orleans County, Vermont on July 16, 1828 and died at his home in Des Moines, June 27, 1884. Dr. Rawson may be regarded as the most prominent of the early Des Moines physicians and surgeons. He belonged to a family distinguished for its sterling adherence to principles of integrity, thrift and economy, and had developed under conditions and surroundings that made such qualities essential to success.

Dr. Rawson began the study of medicine with Dr. A. P. Barber, a local physician of considerable note and graduated from the Woodstock Medical College, Vermont. After practicing medicine in Canada for two years, he attended a course of medical lectures at the College of Physicians and Surgeons, New York City, where he received an additional degree of M.D. After graduating, Dr. Rawson served an internship in one of the New York hospitals.

In 1849 during the California gold fever, he secured the position of ship's surgeon on S. S. Lewis plying between New York and San Juan and San Francisco via Cape Horn. He served on this ship until it was wrecked near Acapulco. After the loss of his ship, he served as surgeon in the Marine Hospital at San Francisco for a period of two years. He then returned to Vermont and in 1856 located in Des Moines. In 1861, Dr. Rawson was made surgeon of the Fifth Iowa Infantry and later appointed brigade surgeon and served until impaired health compelled him to resign. He then resumed practice in Des Moines.

In November, 1865, Dr. Rawson married Miss Mary E. Blake of Swanton, Vermont. In 1868, he became a member of the Iowa State Medical Society and later of the American Medical Association.

Dr. Rawson was a quiet and reserved man of sound judgment, conservative in business and in professional relations, and successful in both.

DR. R. J. FARQUHARSON

Dr. R. J. Farquharson, the first secretary of the Iowa State Board of Health, was born in Nashville, Tennessee, July 16, 1824. Received his preliminary education at the University of Nashville and graduated in medicine from the University of Pennsylvania in 1845.

Dr. Farquharson, after graduation, spent two years in hospital service at New Orleans. In

1847 he was appointed assistant surgeon in the United States Navy, but resigned his commission in 1855. During the Civil War he served as surgeon to Andy Johnson's regiment and during the campaign of 1863-4 had charge of the United States Military Railroad Hospital at Nashville. In 1869 he removed to Davenport, where he resided in 1881, when he was elected secretary of the Iowa State Board of Health (Dr. L. A. Andrews serving temporarily at the organization May 5, 1880), and removed to Des Moines, where he resided until his death September 6, 1884.

Dr. Farquharson was a scientific and scholarly gentleman, possessing a wide knowledge of medical literature in several languages. He was a member of the Iowa State Medical Society; the American Medical Association; the American Health Association; the American and the English Associations for the Advancement of Science; the American Antiquarian Society and the representative for the West in the Institution Ethnographic.

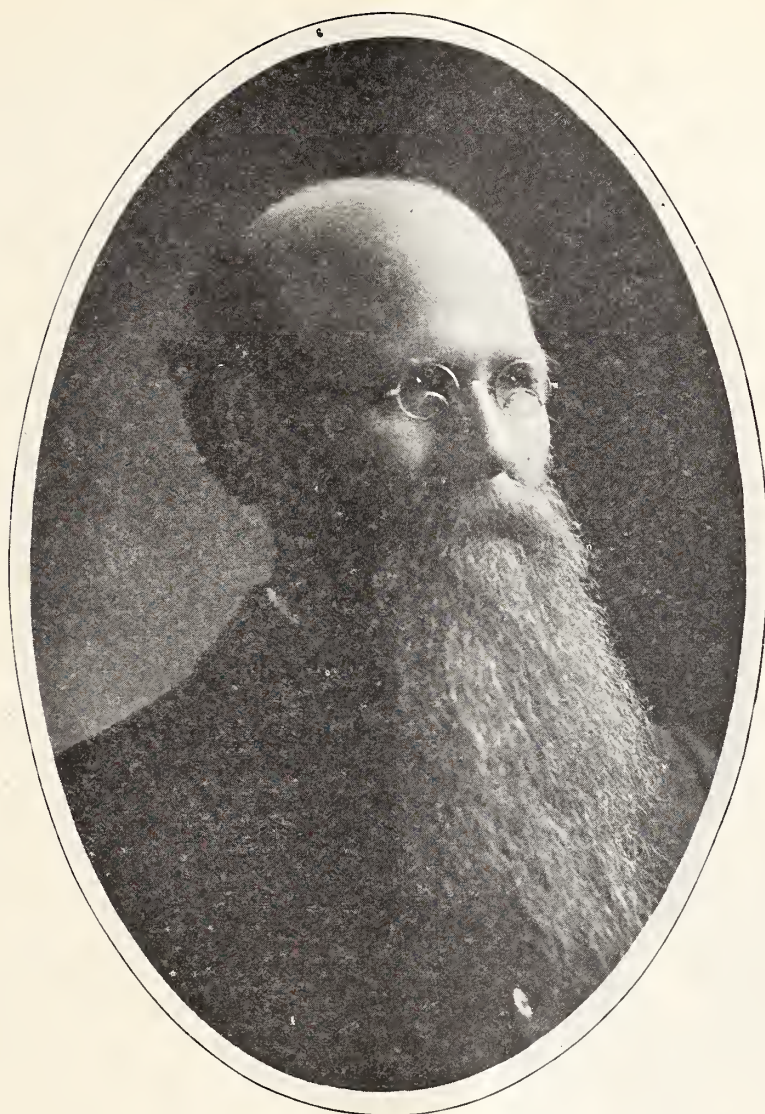
DR. JUSTIN F. SIMONDS

Dr. Justin F. Simonds died January 3, 1923, at the residence of his son, Dr. Edward B. Simonds, at Riverdale, Md. He was ninety-three years old. He held the position of medical examiner at the pension bureau for twelve years, resigning in 1904 because of advanced age.

Dr. Simonds was born June 18, 1826, in Pawlet, Vt. He graduated in medicine in 1847 at the College of Physicians and Surgeons, in Albany, New York, and moved to Iowa to practice his profession. He named the city of Iowa Falls, Hardin county, and helped in the planning of it. He was the only physician in the radius of one hundred miles, and in the early fifties, when the frontier settlements were swept by small-pox, he attained great success in treating the disease and stamping out the plague by original methods.

His skill in handling the plague was brought to the attention of the medical profession throughout the country, and later, during the civil war, when the disease broke out in Memphis, Tennessee, he was called into military service as a surgeon and was placed in charge of the situation in that city. He met with success there also, and after the war, in which he continued to serve as operating surgeon, he was made sanitary officer of Memphis, in which capacity he completed the cleaning up of the city.

He later returned to Iowa, somewhat broken in health, and finding the climate too severe for him, he moved to Fayetteville, Arkansas. Coming to Washington in 1892, he entered the service of the pension bureau, and following his retirement, he



DR. HUGH LIVINGSTON

has lived with his son in Riverdale, retaining his interest in the advancement of medical science and surgery up to the time of his death.

DR. HUGH LIVINGSTON

Dr. Hugh Livingston of Hopkinton, Iowa, died at his home March 10, 1923. He was born at the old homestead near Hopkinton, October 5, 1846. Dr. Livingston's parents were born in Scotland and were members of the famous Selkirk Settlement in Canada. In 1835 the Livingstons moved south as far as Ft. Snelling, where the father engaged in building boats. Later, members of the Settlement, including the Livingston family, came down the Mississippi in boats to Dubuque. In 1837 the Livingstons took up a claim and were the first family to locate in Delaware county. The claim remains a part of the large farm holdings of the doctor, who was the last of the pioneers among them.

Dr. Livingston attended Knox College and

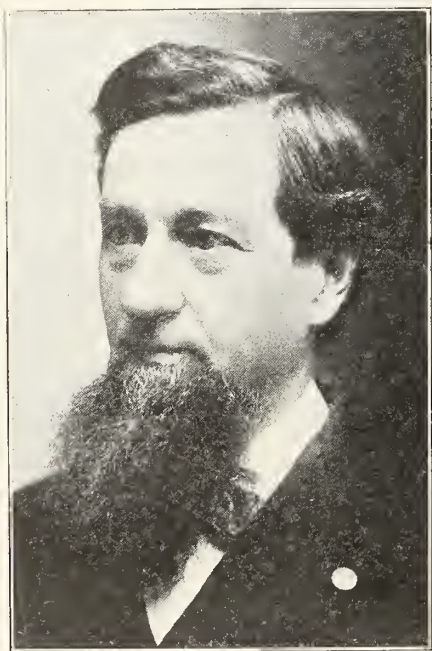
later he was employed for a few years in the quartermaster's department in the building of the Union Pacific Railroad through the mountain states. Returning to Hopkinton on the completion of the railroad, he engaged in the drug business. In 1890 Dr. Livingston graduated from Rush Medical College and returned to Hopkinton, where he practiced medicine to the time of his death. On December 10 he married Miss Hattie Steward. Two children, Huberta and Harriet, who, with his wife, survive him.

Dr. Livingston was a member of Delaware county, Iowa State Medical Society and the American Medical Association, the Austin Flint-Cedar Valley and the Tri-State Medical Societies.

Dr. Livingston was one of the men of the medical profession who became identified with the early history of Iowa, and devoted his energies to the building of the state, developing its resources and to public affairs which has created the wealth and comfort of the generation.

DR. EDWARD HAMLIN HAZEN

Among the men who contributed to the advancement of medicine in Iowa was Dr. Edward Hamlin Hazen, whose biography Dr. Lewis Schooler has traced so carefully and which we publish in this connection. It will be seen that Dr. Hazen was no ordinary man, but rather one who had a high ideal of duty and service and who felt impelled to prepare himself with unusual care in his profession. In Dr. Hazen's day the careful and thorough fitting of himself for his specialty involved much labor, expense and sacrifice. Specialists in medicine outside of large cities were rare, and even in our large centers of



DR. EDWARD HAMLIN HAZEN

population but poorly organized. As noted by Dr. Schooler, Dr. Hazen availed himself of all that could be secured in America and in 1872 studied in London and Paris. Quite different now, when those desiring special training in ophthalmology, otology and rhino-laryngology have only to choose one of the many centers of study.

Dr. Hazen's sense of patriotism and willingness to serve his country is shown by his enlistment in the first three years' regiments that went out from Michigan during the Civil War and was assigned to the Second Michigan Volunteers and was in the battle of Bull Run. At the end of one year, was honorably discharged and entered the Regular Army and served as hospital steward for three years in the General Hospital at Alexandria, under U. S. Surgeons Porter, Summers and

Page, and was discharged on the 23rd of June, 1865.

In 1867 Dr. Hazen became a member of the Iowa State Medical Society. The writer first met him in at the Marshalltown session of the Society in 1873, when he read a paper on "Optical Defects and Their Correction," illustrated by diagrams. Paper discussed by Drs. Field, Hughes and Angear.

The friendship commenced at that time continued until Dr. Hazen moved to Oakland, California, in 1913 in search of a more agreeable climate. After moving to Oakland Dr. Hazen contributed two papers on his specialty to the Journal of the Iowa State Medical Society.

Through the courtesy of Mrs. Hazen we are able to present a photograph of the doctor, which represents him in his best days, and shows a man who never grew old mentally or physically.

DR. EDWARD HAMLIN HAZEN

(Lewis Schooler, M.D., Des Moines)

Dr. Edward Hamlin Hazen, ophthalmologist and otologist, whose professional training was received under men eminent in this specialty, while his own professional service won him high rank in practice, was born April 12, 1834, at Elyria, Ohio, his parents being Edward and Minerva C. (Hamlin) Hazen. The grandfather, Benjamin Hazen, was a Revolutionary soldier who participated in the battle of Bennington. He married Elizabeth Gates. The ancestry of both the Hazen and Hamlin families can be traced back to 1635, Dr. Hazen being of the seventh generation in America. His father was well known as an author of school books and also of a volume entitled Technology of Profession and Trades (Harper Library). He died April 24, 1877, in his eightieth year, and his wife passed away April 10, 1895, in her eighty-ninth year.

Dr. Hazen spent his youthful days in the East and there attended the common schools. Subsequently he engaged in clerking in a general mercantile store in Ohio and also followed farming in that state. In the winter of 1856-57 he taught school in Winneshiek county, Iowa. In 1858 and 1859 he was a student at Oberlin College, Oberlin, Ohio, preparatory to the study of medicine. In the fall 1860 he entered the medical department of Michigan University, there continuing his studies until he joined Company K of the Second Michigan Infantry. He enlisted as the regiment was leaving Detroit for Washington, D. C. and participated in the battles of Bull Run on the 18th and 21st of July, 1861. At the end of a

year he was discharged from the volunteer service and enlisted as hospital steward in the United States Army, serving in that capacity in the General Hospital at Alexandria, Virginia, for three years. After the war, in 1865-66, Dr. Hazen matriculated in what is now the Western Reserve Medical College and graduated in 1866. For a year in 1866-67, he engaged in the general practice of medicine in Buffalo, New York, and on the 8th of April of the latter year removed to Davenport, Iowa. In 1869 he went to New York and spent four successive winters in the clinics under Professors Agnew, Roosa, Pomeroy, Knapp, Lefferts and other eminent specialists in the disease of the eye and ear, and also took optical instructions of Doctors Noyes and Pulley, afterward returning to Davenport, where he practiced until 1891. At that time he came to Des Moines and has since been a representative of the profession in this city, specializing throughout the entire period in the treatment of diseases of the eye, ear, nose and throat, in which connection his superior ability was widely recognized. For four years, from 1870 until 1874, he was lecturer on the eye and ear at the University of Iowa and was professor of ophthalmology and otology in the medical department of Drake University (College of Physicians and Surgeons) for sixteen years, ending in 1900.

Establishing the Eye and Ear Infirmary of Davenport, Iowa, he advertised it by placing a cut of the building in the paper without encomiums, and this, being pronounced non-professional he was turned out of the University. On its organization he was invited by Dr. Blanchard to join the faculty of the College of Physicians and Surgeons at Des Moines. His contributions to the profession aside from private practice established his position as one of its valuable members. As an author he became well known as the writer of a small book called *New Findings in Ophthalmology and Otology*, which was published in an enlarged second edition in 1911. He was the inventor of a system for treating the eye muscles in eye strain and invented the *Kratometer* in this connection. Not being able to get opticians to manufacture this instrument, he and his son undertook the work of manufacture and have sold one hundred and fifty in this country and abroad. He was a regular member in good standing of the American Medical Association, The Iowa State Medical Society and The Polk County Medical Society. At the time he resigned his professorship in the Drake University in 1900 he was made emeritus professor of ophthalmology.

Dr. Hazen was united in marriage in 1874 to

Miss Sally Feeman of Lancaster, Ohio, one of the two daughters of Mrs. Elizabeth Feeman, a widow. Their living children are: Edward B., who is married and lives at Bridal Veil, Oregon; Roy Alfred of San Francisco, California; Arthur Waldo, who wedded Miss Edythe Appleby of Denver, Colorado and now makes his home in Omaha, Nebraska; Benjamin Hamlin of Bridal Veil, Oregon, and Laura, the wife of W. E. Pitcher of Berkely, California.

Dr. Hazen was never an office seeker or holder, but before the Civil War became a stalwart advocate of republican principles, which he has continued to support to the time of his death. He was a member of August Wentz Post, No. 1, G. A. R., of which he became commander and for two years he was medical director in the state encampment. Fraternally he was a thirty-second degree Mason, United States Jurisdiction, Registrar of the Sons of the American Revolution (state). He joined the Iowa Sons of the Revolution on its organization in Davenport. When twelve years of age he became a member of the Methodist Episcopal Church of New York City and for twelve years he was non-affiliated. During the succeeding period of twelve years he was a Congregationalist and for a similar period was a member of the Unitarian church. He was a man of broad and liberal views, not only upon religious but upon all questions, and his position upon any vital question was always taken from a progressive standpoint.

DR. AMOS BABCOCK

(N. Schilling, M.D., New Hampton)

Dr. Amos Babcock was born at Kirtland, Ohio, January 21, 1845, and died suddenly of acute cardiac dilatation at New Hampton, Iowa, August 23, 1923. In 1852, he with his parents moved to Wisconsin, and in 1858, they came to Iowa, locating on a farm near Fairbank, where he resided until the beginning of the Civil War.

In 1862, at the age of seventeen years, he responded to his country's call to arms in defense of the Union, and served with distinction until the close of the war, receiving an honorable discharge.

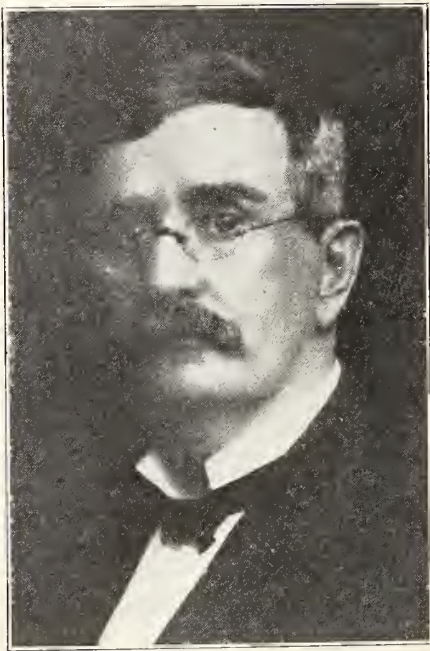
Immediately after the close of the war, he began the study of medicine in the office of Doctor Robinson, at West Union, Iowa, and later attended and was graduated from Rush Medical College of Chicago.

He began the practice of medicine in New Hampton in 1869, and was in the continuous and active practice of his profession until about ten

years ago when he retired on account of ill health.

He was married to Emma Adams at New Hampton in 1870, and together they braved the hardships of early pioneer life. To this union were born two sons. He is survived by his devoted wife, Emma Babcock and a son, Commander J. V. Babcock, who served with distinction in the late World War, and who is now stationed at Honolulu as Chief of Naval operations. His son Herbert died in early youth.

The deceased was an active member of the Methodist Episcopal Church, of the Masonic bod-



DR. AMOS BABCOCK

ies and of A. P. Morton Post of the Grand Army of the Republic. He was also at one time a member of the Board of Visitors of the Naval Academy at Annapolis.

Dr. Babcock was an exceptional character. Coming to New Hampton in pioneer days, he saw and felt the hardships incident to early settlement in a new and undeveloped country. He was ever ready to answer the call of the sick and needy regardless of whether it came from the poverty stricken hovel or the pretentious home. In his professional life he knew no call but duty, and much of his time and talent was given to charity patients. He was successful in his profession, as in every undertaking.

Doctor Babcock saw the virgin prairies surrounding New Hampton gradually transformed into productive fields and blossoming gardens. He watched the hamlet of New Hampton grow and develop into a beautiful and thriving little

city. He took an active part in the civic life of the community and the affairs of state and did his full share in their development. He was a student of history and of men and had a wonderful faculty of retaining in detail the impression which he received from his studies, observations and travels. He was devoted to his family, was possessed of a broad charity and an unswerving integrity. He was distinctly sympathetic in his attitude toward his fellowmen, had the faculty of making friends, and the friendships which he formed were enduring.

In his passing, New Hampton loses one of its good, loyal supporters and public-spirited men, one whose life has been interwoven and identified with the affairs and life of the community for over fifty years.

He leaves as a heritage to comfort his bereaved family, the memory of a life well spent, an honorable career and a good name. What greater tribute could be paid his memory than to say; he was true to his trust, his friends, his family, his country and his God.

FEE-SPLITTING

The Journal of the Medical Association of Georgia prints in its editorial column a letter which is worth re-printing, as it may appeal to others in this far off country where similar incidents may occur. The editor's comment is brief and may be reproduced. The editor says, "The above needs little comment. How long will 'money changers' in the Temple be tolerated? How long?"

About two weeks ago I took a friend and patient of mine to Dr.....of.....for treatment of what I considered a very serious condition. Fortunately he stood the operation well and is apparently on the road to recovery. This morning I received an envelope containing a check for \$.....from the physician to whom I took my patient. Now I have lived and practiced medicine in this country for nearly half a century, and this is my first experience of this kind. My accumulation of worldly goods is not great, but I feel that I am rich in the hearts and minds of my patients and friends. My mistakes and shortcomings have weighed heavily on my shoulders but the "greed for gold" is not among the many sins that I shall soon be called upon to answer. What must I do? I have never knowingly hurt the feelings of a brother doctor. Of course, I know I am a little out of date—some would call me an "old fogey," but is this the end of my experience in the profession I entered as a crusader—the profession I considered then and still consider the noblest of them all?

The Journal of the Iowa State Medical Society

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SANTO TOMAS HOSPITAL, PANAMA

One of the most interesting hospitals it has been our privilege to visit, is Santo Tomas Hospital at Panama City. The hospital was built in 1832 on the pavilion plan. It has a capacity of 600 beds and a daily attendance of 500 patients. The buildings are most unpretentious and situated in the midst of a crowded section of the city, made up of a population of every race and color and station in life. The hospital is under the direction of Major Edgar A. Bocock of the United States Army.

In the treaty between the United States and the Republic of Panama, the United States reserved certain important rights that relates to health and public welfare. The United States reserved the right to maintain a system of sanitary rules and the right of inspection and enforcement. In consequence, the streets of Panama City, while narrow and often one-way streets, are as clean as any model city in the states. Another provision was the maintenance of a hospital. The Santo Tomas was built in 1832, but its operation was not very successful in its management and had a debt of \$150,000.

It was provided under the treaty that a board of hospital directors of five members should be appointed, two United States and three Panamanians; that a surgeon from the United States Army should be detailed as superintendent, with rather extensive powers in management and in the details of operation. It was also provided as a fundamental principle in management, that the hospital should be free to all classes, race and re-

ligion, only providing that people occupying private rooms should pay a hospital fee of \$3 per day and those occupying small wards should pay \$1.50 a day. A schedule of charges for operations was made up for pay patients, that is, patients in private rooms or limited wards. The charge of operating room and anesthetic, \$15. Operations for appendicitis, for instance, \$75; for more difficult abdominal operations, \$100. For tonsillectomy, \$40. The charges for surgical treatment are based on a definite schedule, as above indicated, and are paid to the hospital.

There are sixteen physicians on the hospital staff, two part-time men, four internes, and ten full-time physicians and surgeons, therefore, fourteen doctors are in constant attendance. There are eighty-five trained nurses, under the supervision of a highly trained and competent superintendent from one of the important training schools in the United States. The salaries of the medical staff are paid by the hospital, except the superintendent, who is an army medical officer, detailed by the United States Government. It will therefore be seen that Santo Tomas Hospital is in a sense a government hospital operated in the interest of the Panamanians of the city and country, so operated that success depends on the skill and efficiency of the medical superintendent. There are no handicaps from political or lay officiousness. The superintendent reports to the Panamanian Congress, which meets every two years. The board of five keep watch on the finances. Dr. Bocock has been in charge about four years and has in that time placed the hospital on a sound financial basis, wiping out a debt of \$150,000.

The hospital is supported by the Panamanian Government and about 90 per cent of the patients are charity patients, the hospital itself does not contribute any very considerable amount. Just how the money is raised we are unable to say, except that it is by taxation. A considerable sum comes from the lottery. The Panamanian people look upon a lottery as a national institution and would feel that their rights were being encroached upon if it was suppressed, therefore, the lottery is under the direct supervision of the government and a certain per cent of its profits go to Santo Tomas Hospital. From morning until late at night old Panamanian women of various shades of color are selling lottery tickets (about two to a block). The prizes vary from nothing to \$10,000; every investor expects to draw, if not \$10,000, some very considerable amount. Many people set aside a certain per cent of their earnings to invest in lottery tickets, partly, no doubt, for the excite-

ment and adventure. It is amusing to see people, particularly women, often wives of army officers, speculating on what fortune lies on a certain combination of numbers, and if their particular number has been sold, they will wait until next week (the drawings are held every Sunday morning). The tickets cost 50 cents each; of course the greater the number of tickets bought, the greater the chance and the greater excitement.

Practically all the medical practitioners of the Panamanian Republic live in Panama City and Colon. There are several towns of from 2000 to 6000 people without physicians, but the conditions of life are not such as to invite trained physicians to settle among them and the seriously sick are brought down in boats to either Panama City or Colon, according to whether they live on the Pacific or Atlantic side of the Continental Divide.

Among a primitive people special methods must be employed to reach and serve them, and as these people are very prolific, special agencies are employed to keep the mortality rate low and the method employed by Santo Tomas might well be considered by the child welfare and maternity activities everywhere. Cards are circulated, particularly in drug stores, inviting prospective mothers to come to the hospital every month for the first six months for examination, advice and treatment, if necessary, and after that, every two months. These women are generally poor, have no money to pay physicians and very little knowledge in the care of infants. After the little one is born it is brought back to the hospital at intervals to be examined, weighed and treated, if necessary. The records secured at these repeated examinations are filed and when the woman comes in for confinement, a full record of all possible conditions is there. No case is an emergency case. The danger of a confinement among the poor Panamanians is much less than in the boasted centers of civilization in the United States. Every prospective mother has a Wassermann, and it is a routine test for all patients; on an average 150 tests are made a day.

The present buildings are old and not in accord with the requirements of a modern hospital. Extensive new and permanent buildings are being constructed on the ocean front at Bellevue, and when complete, will give Santo Tomas Hospital a capacity of 1000 beds. In connection with the new Santo Tomas Hospital is to be built the Gorgas Memorial, which will be a School of Tropical Medicine under the auspices of the United States and the Panamanian Governments. Dr. Strong, of Harvard is giving personal atten-

tion to the details of the plan. Santo Tomas Hospital joined with the Gorgas Memorial School of Tropical Medicine will be one of the most interesting and important medical institutions in the world. We trust that provisions will be made to continue the administration in the hands of Dr. Bocock, who has shown extraordinary capacity in developing and administering of a hospital under conditions that must obtain in tropical countries.

In addition to the courtesy shown the writer in relation to the professional work of Santo Tomas Hospital, Major Bocock, the superintendent, had the kindness to furnish us with a copy of his report to the Panamanian Government for the year 1922. This report will show that Santo Tomas Hospital is conducted, not only with extraordinary efficiency, but in a thoroughly business-like manner—a model for any hospital in any country.

Panama, January 31, 1923.

Colonel David Fairchild,
Corozal, C. Z.

My Dear Colonel:—

Referring to my promise of some days ago, I take pleasure in enclosing herewith for the use of Dr. Fairchild, a copy of my annual report for 1922 that has recently been prepared for the chief health officer of the Canal Zone.

I hope that this report may prove interesting to Dr. Fairchild and if there is further information that he may desire, please notify me before his departure.

Very sincerely yours,

EDGAR A. BOCOCK, Major,
Medical Corps, U. S. A.,
Superintendent.

ANNUAL REPORT, 1922

Major Edgar A. Bocock, Medical Corps, United States Army, Superintendent

GENERAL REMARKS

That the hospital has advanced during the year 1922 was recognized in the following extract that is quoted from the message submitted to the National Assembly by His Excellency, Doctor Belisario Porras, president of Panama, on September 1, 1922:

"Hospital Santo Tomas—I take pleasure in informing you that the Santo Tomas Hospital has arrived at such a degree of progress and efficiency that it is an honor to us who are constantly seeking the welfare of the country."

To bring about the progress mentioned in the foregoing, very few radical changes in policy or methods have been implanted during the year, but those previously in effect have been intensified, modified and improved in an attempt to ensure their

more efficient functionation. A constant effort has been made, by furnishing careful and courteous treatment to all patients, to improve the confidence of the public in the institution; to encourage and educate the people having little knowledge of hospital methods to present themselves for treatment early during their disease rather than after they have become moribund and to individually treat every person coming under the hospital's care in such a manner that upon leaving, they become a friend and a potential booster, rather than an enemy and an injurious critic. All personnel of the institution has been particularly instructed in this regard and by patient, kindly adjustment, in the few cases in which misunderstandings and friction has arisen, it has nearly always been possible to smooth out apparent difficulties, to such an extent that it is believed the institution has more friends and a better reputation in the community than at any previous time.

ADMINISTRATION

Training School for Nurses: On March 1, Miss Genevieve Russell, who had been directress of the training school resigned this position and on April 1, she was replaced by Miss Sara E. Adams of Mexico City. The eighth graduating class of nine nurses finished their course of study in the training school on January 29, 1922, and all of these young women have secured suitable positions for the practice of their profession. During the year, an active effort has been made to improve the standards of the training school, in order that its graduates may be more in demand and better qualified to fulfill the professional responsibilities that devolve upon a trained nurse. Rigorous examinations and careful selections of candidates have shown gratifying results in this particular, and the training school is now functioning efficiency and is annually graduating a class of very well trained nurses.

Financial Operations: The year 1922 has been a prosperous one for the hospital from a financial standpoint. The total income for the year amounted to \$236,897.75 U. S. currency, while the total expenditures for the year amounted to \$222,873.65 U. S. currency, showing an excess of income over expenses of \$14,024.10 U. S. currency. The current assets at the end of the year were \$92,288.36, including equipment valued at \$56,419.61, while the liabilities were \$14,429.22, thus leaving a net working capital of \$23,895.38 which indicates that the institution is functioning on a perfectly sound financial basis. As in the past years, the financial policy of the hospital has been to collect fees for services rendered from every person who was able to pay but to treat absolutely free of charge all who were unable to pay for their care, invariably giving the benefit of treatment to the patient in case there was any question as to his pecuniary responsibility. The amount of credit extended to patients has been reduced and at present all transactions are conducted on a cash basis.

The auditing and supply departments have been improved with use and its scope enlarged until the

close of the year finds this important department of the hospital operating in a very satisfactory manner.

Housekeeping Department: During the year, 192,-068 rations were prepared and issued by this department for the personnel and patients of the hospital. The average cost of each ration (doctors, nurses and all patients), was \$0.35.7; while the average cost of hospitalization for each patient, including subsistence and professional care, amounted to \$1.87 per day, as compared with \$1.97 per day for the year 1921. The patients and personnel have been well fed and as a general proposition, have been pleased with their living conditions and satisfied with their employment. During the year, a bakery has been established and at present all bread, pastries, etc., required by the hospital, are being prepared therein at a cost practically 50 per cent below the prevailing prices in the local market, thus resulting in a considerable economy.

Foremans Department: The laboratory, isolation section, nurses quarters and operating room have been completely repainted during the year, and are now in excellent condition. Minor repairs have been made to practically all buildings, a large amount of white washing has been carried on constantly and various wards painted as the necessity has arisen. All electrical, plumbing and other repair work has been done by hospital artisans, thereby obviating the employment of high salaried mechanics for this purpose. Owing to the very old and deteriorated condition of the buildings, practically constant and active attention is required to maintain them in a habitable state until the new hospital is completed.

The cost of maintaining the buildings and equipment of the hospital during the year has amounted to \$3,362.12 U. S. currency as compared with \$4,-515.61 for the year 1921.

PROFESSIONAL SERVICE

During 1922 a continued effort has been made to improve the professional services of the hospital and considerable progress has been noted, although it is still far from being all that is demanded by a present day modern hospital. A total of 9,404 patients were admitted during the year; 111,004 days relief has been furnished making the average number of the hospital of 333 patients daily. Of this total treated, 771 died, 211 were transferred to other hospitals, and 8,122 were discharged. The average length of stay in the hospital was eight days. During the year 5,432 cases were treated by the medical service. There were 1,478 major operations and 725 minor operations performed by the surgical service. The hospital laboratory performed 503 autopsies, 6,840 Wassermanns, 12,714 urinalyses, 3,530 blood examinations, 97 chemical analyses and 9,621 miscellaneous examinations.

The hospital pharmacy filled 12,765 prescriptions for dispensary patients; furnished all drugs and medical supplies to the wards of the hospital as well as all wholesale drugs used by the various departments of the National government of Panama and other

organizations having the privilege of procuring supplies from the institution.

The dispensary, which is also the auditing department, made 7,820 consultations, 11,027 surgical dressings and 1,961 vaccinations in addition to examining and passing upon all patients who sought admission to the hospital, as well as making physical examinations on numerous cases desiring certificates for lodges, passports and other purposes.

The ambulance service, which operates under this department, made 1,826 calls during the year.

The x-ray department handled a total of 1,324 cases. In making these examinations, 3,478 plates and 532 dental films were used, while 163 x-ray treatments were given by this clinic to hospital and outside patients. During the year, a change was made from the use of glass x-ray plates to that of duplitzed films. Owing to the economy in price and easier transportation facilities, this change was considered advisable.

During the year, 4,796 patients were examined and treated in the eye, ear, nose and throat clinic; 193 operations on these cases were performed; 341 refractions were done and 1,272 prescriptions were furnished to clinic patients.

The venereal clinic and genito-urinary department have continued to functionate in a progressive manner and has rendered good service, but the examination of prostitutes that is required by existing municipal laws has not been satisfactory on account of failure to force these women to report for their weekly examination. The number of new cases admitted to the genito-urinary department has been 2,721 of which 1,847 were males and 874 females. Consultations to the number of 1,432 were given and 35,190 treatments were provided, while 2,323 injections of salvarsan, 2,792 injections of mercury and 505 surgical operations have been performed on venereal patients. Of the Wassermann tests performed, 28.54 per cent have been found to be positive.

During the year, the "Junta Nacional de Higiene" authorized the establishment of a venereal clinic in the city of Colon to be operated under the supervision of the hospital in the same manner as the one conducted within the institution. This clinic was commenced on July 1, and after the preliminary difficulties incident to its organization were overcome, it has functioned in a very satisfactory manner.

The maternity service and the prenatal clinic have been progressive and exceedingly active throughout the year. Expectant mothers to the number of 2,136 have been examined in the clinic while 871 babies have been delivered in the ward. The number of babies born dead and dying after birth during this year was sixty-two as compared with seventy-four for the same period last year, thus showing a gratifying percentage of improvement in mothers having the benefit of prenatal attention. The results attained in the clinic during the year prove conclusively that the infant mortality among mothers availing themselves of the benefit of prenatal care is reduced

by at least 30 per cent below that shown among mothers not having such care.

During 1922, every possible effort has been devoted to keeping the hospital in line with the newer professional development that are constantly being introduced by the medical profession. Several members of the hospital staff were sent as delegates to the sixth Latin-American Medical Congress held in Havana, Cuba, during the month of November and were greatly benefited by their visit to this conference. Other members have visited the clinics of Europe during the year and have returned to Santo Tomas Hospital much better qualified to carry out their duties and responsibility to the institution. The Canal Zone Medical Association met at this hospital three times during this year and several interesting and instructive papers were read by the staff of the institution. A study of 15,000 cases of stovaine anesthesia was presented by the chief of the surgical service, while various other contributions of professional merit have been prepared from time to time.

CONCLUSION

The hospital is steadily improving in financial stability, professional efficiency and in reputation among the people. At present, it is operating in a business-like systematic manner in which personal favoritism or political adhesions have no part. The personnel are in general contented and their esprit de corps is growing better. It is realized that their employment, permanence and promotions depends entirely on their efficiency and ability to produce results and with this fact constantly in view, very little difficulty has been experienced during the year in maintaining discipline and compliance with existing regulations.

As during the past the number of doctors and graduate nurses is very limited for the amount of work that must be performed and in order to further improve the efficiency and progress of the institution, no more necessary or desirable step could be taken than the authorization of several additional capable resident physicians and graduate nurses. At present, the hospital is largely run with internes and pupil-nurses with only such supervision as can be given by a very limited staff and so long as this condition prevails, it will not be possible for it to reach the stage in professional work that is desirable at the present day and age.

INSULIN THERAPY

Since the writing of our editorial on "The Present Status of Insulin in the treatment of Diabetes Mellitus"¹ a symposium of articles, written by our best known diabetic clinicians, have appeared in *The Journal of Metabolic Research*.² These articles have been well reviewed by Vaughan³

1. This Journal, 1923, 13, 286.

2. *Journal Metabolic Research*, 1923, 2.

3. Vaughan, W. T., Editorial on Insulin Therapy, *Journal of Laboratory and Clinical Medicine*, 1923, 795.

and from this review we present the following summary:

Insulin is only effective when administered subcutaneously or intravenously, and when so administered, no local reaction follows, provided that the drug is fit for administration and is properly given.

The number of doses to be given varies according to the severity of the disease. All the authors seek to reduce the number of doses per twenty-four hours as far as possible, thus Woodyatt gives only a morning dose in 90 per cent of his cases where four doses are given in severe cases by Allen and Sherrill.

The average unit of insulin will metabolize $\frac{1}{3}$ grams of carbohydrates. In a well treated case the insulin is more potent than when the case is first put on treatment. Woodyatt determines the dose needed by putting the patient on a basal diet. The amount of sugar excreted is determined, and the insulin needed to metabolize half of the sugar eliminated, is given on the first day, and the drug is increased by five units until the patient is sugar free.

Hypoglycemia may follow an overdose of insulin anywhere from two to twelve hours following a single injection. The symptoms occasionally set in even with a blood sugar level as high as .08 or .09 per cent; but more frequently when the sugar goes below .06 per cent. When the percentage falls to .035 the patient usually becomes unconscious. The reactions are most severe in the undernourished and weak. Symptoms of hypoglycemia have been noted after giving one unit of insulin. The treatment of this condition is the administration of glucose intravenously, if needed, otherwise, as orange juice by mouth. Allen has found, that, in an emergency, a clean glucose solution may be used without sterilization.

In the treatment of pre-coma or actual coma, Allen first takes a sample of blood for sugar determination, then through the same needle, administers twenty-five units. This is immediately followed by 25-50 units subcutaneously. These are followed by other doses if the laboratory findings indicate further need. Glucose is simultaneously given so that the blood sugar level is kept at 0.3 per cent. Alkalies are also beneficial in coma because the alkali reserve is low. Alkali should be given as soon as possible and Campbell suggests that 20 grams of sodium bicarbonate may safely be given per 84 lbs. of body weight.

The majority of the authors quoted believe in keeping the urine as free from sugar as possible, and they also agree that the tolerance is little, if any, affected by the drugs.

Glomset.

WHAT IS THE HUMAN BODY WORTH?

Workmen's State Compensation Law Shows Wide Disagreement

The Boston Medical and Surgical Journal, under the above caption, reviews in considerable detail, Workmen's Compensation as set forth in the report of the National Industrial Conference Board, of 10 East 39th St., New York, just completed, which we abstract in part, as a matter of interest on this subject.

There is an increasing tendency to give due consideration to the value of adequate medical treatment in the administration of the laws. Early in their administration, the doctor's part received scant attention. In some states, even for the most serious injuries, only two weeks' medical treatment could be legally provided. "A period of experience has now elapsed," says the report, "sufficient to enable those who make the laws and those who administer them to obtain a better view of the problem. Such experience has shown the advisability of greatly increasing both the time and amount of medical service rendered, until at this time in twenty states such service may be unlimited."

The report shows that employers, for failure to report accidents to their men, may be fined various amounts, ranging from \$10 in California, Delaware and Illinois, to a years' hard labor in Alabama or \$2,500 in West Virginia.

The term "medical service" receives widely different interpretations in various states. Ohio and Connecticut have freed employers from liability when injured workmen took their troubles to quacks, masseurs, and "doctors of medical electricity." Similarly the California state commission refused to reimburse a worker who consulted a Chinese herb doctor. Iowa and Connecticut do not regard osteopaths as qualified to act in compensation cases, while California permits them. In Wisconsin Christian Science treatment may be resorted to by an injured worker with his employer's consent. There a death from a bruised shinbone infection which was treated by prayer was held compensable. However, a Boston Elevated Railway employe who presented a \$14 bill for services by a Christian Science practitioner lost his claim.

One result of the many laws has been to break down the universally accepted principle of privileged communication between doctor and patient. In many states physicians can be compelled to testify as to their treatment.

States differ in the laws' rulings on various surgical operations. For instance, the hand extends to the elbow in the legal opinion of Alabama, Connecticut, Delaware, Kansas, Nebraska, New York, and other states, while it extends only to the wrist in Colorado, Idaho and Montana. The human foot in Colorado only extends to the ankle, but in Alabama it extends to the knee. New York takes a middle

ground, merely qualifying it as some place "between the knee and the ankle." A Pennsylvania worker lost the power to walk easily with one foot and received compensation, while in Minnesota the supreme court refused to affirm a similar award because "the foot was still there," but authorized partial compensation.

Various state courts and commissions have answered in various ways the question, "What is the human body worth?" For example, a thumb is worth \$225 in Wyoming, \$600 in Oregon and in New York and Alabama the legal compensation for sixty weeks. Wyoming holds a human hand worth \$1,000, while its value rises to \$1,600 in Washington, \$1,900 in Oregon, and 244 weeks' compensation in New York, and it is worth 104 weeks' compensation in Colorado. Similar variations in legal value occur with reference to loss of an eye, a toe, a foot and fingers.

New York holds that when a worker is injured so that only his good looks are impaired, he may collect from his employer owing to the humiliation entailed. In New York and Michigan compensation was awarded when horses bit off ears of worker, but in New York the award was based on the common law. One worker collected in New York because he was unable to replace his lost eye with one of glass, and a drooping eyelid which made the person appear to be winking at whatever he observed, resulted in another award. Another New York workman, whose nose was bitten off by a horse, received \$2,500 from the compensation board. Deafness has been valued at \$3,000 in Oklahoma, and deafness in one ear at \$1,500. In Washington loss of hearing is only compensable at \$1,900, and of one ear's deafness at \$500.

Pennsylvania has held in the case of an automat lunch counter attendant, that heat prostration at work, causing death, was an accident, while in Connecticut frostbite was similarly judged. In New York, however, the courts held that a sunstruck brewery wagon driver was not entitled to compensation. The Pennsylvania authorities showed regard for the injured worker in case of a dog-catcher in New Castle, who was bitten by one of his captives and died of hydrophobia. His estate received compensation.

Persons bitten by insects, when spotted fever have resulted, are not entitled to damages in the opinion of the Idaho Industrial Accident Board. However, New Jersey authorities held that a chef pinched by a lobster was entitled to five weeks' disability award for infection. In California, on the other hand, a farm hand bitten on the leg by a spider failed to get damages. The same commission, however, reversed this ruling in the case of a sailor whom a spider bit, holding that spiders had no business aboard ship and that the ship's owner was liable. Poison ivy injuries have been held compensable in New York and Massachusetts, but a municipal laborer in San Francisco was denied an award for poison oak injuries.

One of the sharpest controversies among compensation boards is over the proper valuation of the impairment of sight. Various tables and tests have been evolved, but they display wide discrepancies. They agree, in fact, only on one item: What constitutes normal vision?

Montana, Idaho, Utah and Wisconsin allow twenty weeks' more compensation for the removal of an eye than for blindness in one eye without removal. Pennsylvania, however, holds that where there is blindness the removal of the eye makes no difference, and allows nothing additional.

One of the most important phases of the report is that which shows the widely varying amounts expended for medical treatment under the awards of various states. For instance, Wyoming in one year allowed only 3.6 per cent of the total awards for medical expense, while the percentage in Connecticut for two years was 38.2, totaling \$1,663,107.08, and in Massachusetts, where industrialism has reached one of the highest points of development, the percentage was 20.8 for medical expenses of \$1,602,057.74.

In only one state, New Mexico, is there a provision for the physical examination for workers before injury occurs.

Summing up its investigation, the report shows that both interested parties to compensation laws, the workers and the employers, have accepted as just the principle that one group should be charged with major responsibility for injuries suffered by another group. Differences which have appeared are not of sufficient importance to cast doubt on the value of the work as a whole.

MEDICAL ETHICS

The American Medical Association in the great work it is undertaking of co-ordinating the medical profession, and of uniting it for the common purpose of carrying out the traditions of a great and learned profession that will challenge the respect and confidence of the public, is inquiring into the various causes and points of weakness. There are many leaders who stand for the highest ideals, and are devoting their energies to bring the profession together for the public good and for their personal advantage, but, without the co-operation of the great mass of the profession, their efforts will be largely wasted.

One of the important inquiries is touching ethics, or what we generally designate Medical Ethics. Of course when an inquiry is submitted, there are various answers. There are unfortunately too many men among all classes, who look upon the misfortunes of others with more or less satisfaction, if it will bring advantage to themselves; this leads to comment that discredits the class to which the individual belongs, so it is said that "over 50 per cent of malpractice suits are due

to jealousies and factional fights among members of the profession. Probably 45 per cent of the remainder of the suits are due to loose talk and criticism of the treatment given patients, of which the physician offering the criticism has no knowledge whatever aside from hearsay." This may be an exaggeration, but it is nevertheless a breach of ethics and reacts upon the individual doctor and to the class to which he belongs, and lessens public confidence in the profession. Doctors may be unskilled and negligent, but there are better ways of helping than by laying the foundation for an expensive and disastrous malpractice suit. The argument is to hold together in securing higher standards and better conditions of practice, and a closer observance of the accepted rules of Medical Ethics.

Macksburg, Iowa, August 21, 1923.

D. S. Fairchild, M.D.,

Clinton, Iowa.

Dear Dr. Fairchild:

Current number of Journal of Iowa State Medical Society is rather better than usual from viewpoint of one "country doctor." I can understand how some men think that many of the articles published from time to time are of interest chiefly to the specialist, or to the city physician, and are of little interest to many men in the far flung rural districts. By the way, how do you like the English Edition of *Ars Medici* (Vienna), publication of which began in January, 1923?

Doctor, if you think, as I do, that most members of the State Society base their fees, mileage, etc., on their respective county fee bills, what would you advise doing to make the fee-cutter see the error of his ways? He, too, in perhaps every instance, is a member of the State Society. If it were true that he is injuring or wronging only himself, it would be different. Again, if he would reduce his fee to none except the worthy poor, it would be excusable, perhaps commendable.

I have high regard for my competitors without a single exception; but when one of them comes into my territory—I cordially concede to him the privilege of doing so—when he comes, say, fifteen miles and charges a wealthy land owner \$10 "per," somehow I am peeved. If I were called to his town I would charge \$2 for the visit, \$1 extra for a night call, plus \$1 per mile for the entire distance, or a total of \$18. I would do this except in the case of worthy charity, because I consider it wrong to belong to any organization to whose by-laws I have once subscribed, and then pay no further attention to the principles of said organization.

Doctor, it is my humble opinion that this matter of fee-cutting should be emphatically discouraged by the "higher ups," by the officers of the county and state societies. Personally, from my viewpoint, a man should be asked to indicate his intentions re-

garding the matter of adhering to the provisions of his county fee bill. Further, he should be required to do this each time he offers the amount of his annual dues to his local society.

In a certain neighboring town where there are two excellent physicians, I am informed that one of them abides by the letter and spirit of the county fee bill and one does not. Result: patients reproach the one man for charging more than the other does. It is not true that the public never thanks any man for charging less than his competitor does.

I repeat: I feel friendly toward all of my competitors. There are no finer men in the profession, but I do wish I could be of some small service in showing my fee-cutting friends that they are hurting not only themselves, but also their fellow-practitioners, and, in turn, the entire State Society.

Faternally yours,

W. J. Wulstein, M.D.

UNITED STATES CIVIL SERVICE EXAMINATION

The United States Civil Service Commission announces the following open competitive examination:

JUNIOR MEDICAL OFFICER

Applications will be received until December 28. The examination is to fill vacancies in the Indian Service, at entrance salaries ranging from \$1,000 to \$1,200 a year, plus the increase of \$20 a month granted by Congress, and quarters, heat, and light; in the Coast and Geodetic Survey, at an entrance salary of \$1,020 a year, plus the increase of \$20 a month, and an allowance of \$1 a day for subsistence while serving on board ship, except in the Philippines, where the allowance is \$2.50 a day; and, in the Panama Canal Service, at an entrance salary of \$250 a month.

Applicants must have been graduated from a medical school of recognized standing; or be senior students in such institution and furnish proof of graduation within six months from the date of making oath to the application.

Competitors will not be required to report for examination, but will be rated on their education, training, and experience.

OCULISTS, OPTOMETRISTS AND OPTICAL FIRMS

Epoch making acts usually are not recognized as such until long after their occurrence. As a rule, their significance is appreciated only after their effect upon subsequent events has had time to manifest itself. But it is possible that those who are at present engaged in the practice of ophthalmology may be witnessing such an epoch making act, in the position recently taken by a well known wholesale optical house. Briefly stated, this firm has closed out all of its accounts with optometrists, and has announced that it will fill prescriptions only when they

are signed by members of the medical profession. In addition, it proposes to inaugurate a campaign, by means of which the public will be educated as to the differences between oculists and optometrists, and the essential limitations of the latter.

Heretofore, oculists have always been on the defensive against the attacks of the optometrists. In common with other "get knowledge quick" groups of pseudo-medical practitioners, the optometrists have been waging an offensive (in both senses of the word) campaign to obtain legal recognition in the several states of the union, and hardly a year passes without the oculists of some state being compelled to appear before its legislature to combat their activities, sometimes unfortunately to no avail. Whenever the oculists have appeared in an active capacity, it has been before some medical society or in some medical journal, informing their confreres of facts which they already know. They have been barred from the public press, partly from fear of appearing unethical, and partly because the public press, from motives of self interest, or otherwise, has refused to present their side of the question.

This anomalous position has long been recognized, and at the 1921 meeting of the American Academy of Ophthalmology and Oto-Laryngology, a Committee on Publicity and Service was appointed to consider the question of the proper method of acquainting the public with necessary medical facts. This is a step in the right direction, and if it is assisted by the action of the non-medical organizations, so much the better. The present status of refraction is an evolution from the days of the itinerant spectacle vender; but the instruction of the consumer has not kept pace with the progress of those whose duty and privilege it is to supply them with correcting lenses. Anything which tends to alter this state of affairs should be welcomed.

Another phase of this firm's action is its refusal to supply lenses to optometrists. Oculists in the smaller cities, and those in the larger ones who supply their patients with lenses through the medium of wholesale optical houses have been forced to obtain such lenses, etc., from the same firms which supply optometrists. Not only is this true, but it is stated that some firms make a special, lower, price to optometrists, thus introducing the element of unfair competition. Optometrists are organized for action; oculists, for science. If oculists would realize what a force their united numbers could exert, by patronizing firms which cater exclusively to them, a revolution would be brought about in the attitude of other firms. They would realize that oculists would have a choice between "fair" and "unfair" firms, and many of them would undoubtedly swing into line. A decided check would be given to the activities of optometrists, for when an army is engaged in preventing the turning of its flank, it has little leisure for aggressive action. When a firm states by words and acts that it does not desire the accounts of a certain group of men, such action exerts a moral force be-

yond its immediate and direct results. In defending themselves from the implications produced, optometrists will hardly have time to attempt new inroads on the medical profession.

IOWA STATE UNIVERSITY NEWS NOTES

Dr. Don M. Griswold

The department of internal medicine of the University Hospital under the direction of Dr. C. P. Howard, will present a symposium on the subject of "Visceral Syphilis" at the Tri-State Medical Society meeting at Des Moines, October 29.

Twenty-three physicians from this state have completed the course in dietetic regulation and therapy in diabetes. Applications are now coming to the department of internal medicine for this course when it is repeated. The dates for the second course have not been decided upon, but will be announced later.

The Hospital Social Service at the University Hospital has been increased by the following additions of the staff: department of head specialties, Miss Morris and Miss Kammerer; department of orthopedic surgery, Miss Potgeiter and Miss Lenz; department of venereal disease, Mrs. Leirle.

A teaching center has been established for the School of Public Nursing. This will give practice and experience in the field work of county, city and school nursing to the students enrolled in the school. This is an important addition to the curriculum of the School of Public Health Nursing, and will make the course more attractive.

Dr. H. W. Scott has been appointed instructor, and Dr. King, clinical assistant in the department of genito-urinary surgery.

Miss Belyea, chief nurse of the Psychopathic Hospital, read a paper before the state nurses' meeting entitled, "Nurses' Training in Psychiatry."

The superintendent of the University Hospital reports the opening of an annex to be given over solely to the care and treatment of cases of diabetes.

The entering class of the Nurses' Training School has an enrollment of seventy-two. Twenty-two of these students have their A. B. degree, or will complete the work for this degree in the College of Liberal Arts before finishing their hospital work. Thirty young women entered the Liberal Arts College in the combined course leading to the degree of B. A. and graduate nurse. The courses giving collegiate work along with nurses training are proving very attractive to young women going into the nursing field. Additional courses in public health nursing, hospital supervision and administrative work is given each year to selected graduates.

At the meeting of the State Nurses' Association in Waterloo, October 9-12, Miss Creelman, superintendent of the Nurses' Training School, read a paper on "The Problems of the Small Training School." Miss Lindsay, instructor in nursing, gave a demonstration of the use of hospital equipment in teaching pupil nurses.

The laboratories for the state board of health succeeded in isolating anthrax bacilli from a shaving brush of one of the fatal cases of anthrax that recently occurred in this state.

Don M. Griswold, state epidemiologist, recently investigated an outbreak of fourteen cases of typhoid fever at Oelwein. The investigation revealed that the infectious agent was distributed in the milk.

SOCIETY PROCEEDINGS

Linn County Medical Society

Dr. Joseph C. Bloodgood, associate professor of surgery at the medical college of Johns Hopkins University, Baltimore, gave a lecture on Cancer in the Breasts of Women before members of the Linn County Medical Association and doctors from nearby Iowa cities at the Montrose Hotel. About 100 attended. The lecture was illustrated with stereopticon slides.

Points brought out by Dr. Bloodgood were the advantages of early examination of breasts when lumps appear, the early treatment of cancer and early surgical operation when it is deemed necessary. The doctor emphasized the importance of keeping accurate reports of cancer cases in order that correct statistics can be compiled for reference in future cases.

Dr. Bloodgood is a member of the American Society of Cancer Research, and an authority on the subject of cancer.

The next meeting of the society will be in November. The speaker will be Dr. Franklin Martin of Chicago, president of the American College of Surgeons.

Mahaska County Medical Society

The monthly meeting of the Mahaska County Medical Society was held Tuesday evening at the office of Dr. S. W. Clark. A paper on the Modern Uses of Iodine in Medicine was read by Dr. E. Marsh Williams.

Mitchell County Medical Society

The Mitchell County Medical Society and their families were entertained by Dr. J. C. Lee and wife at their beautiful farm home, near Riceville, Thursday, September 20.

After a bounteous six o'clock dinner, Dr. Nicholas Schilling, of New Hampton, read a paper entitled "Uterine Hemorrhage" which was discussed by several of the members.

Cedar Valley Medical Association

The regular monthly meeting of the Cedar Valley Medical Association was held at Charles City when Dr. John Peck of Des Moines spoke on Diseases of the Chest. Following the afternoon session dinner was enjoyed at Hotel Hildreth. Following the dinner Drs. H. F. Curtis and J. Niemack read papers before the association. The out of town physicians present were: Doctors Woodward of Mason City, Yenerich of Rockford, O'Keefe and Staudt of Marble Rock, Call of Greene, Cordes of Rudd, McCrane of New Hampton, Wiggins of Osage and Walker of Riceville.

Iowa and Illinois Central District Medical Assn.

Dr. F. J. Otis of Moline was elected president of the Iowa and Illinois Central District Medical Association at the annual meeting held August 30, 1923 at the Davenport Outing Club. Vice-president, Dr. W. S. Binford, Dixon, Iowa; secretary, Dr. K. W. Wahlberg, Moline; treasurer, Dr. W. D. Snively, Rock Island; censors, Dr. D. B. Freeman, Moline, and Dr. R. R. Kulp, Davenport; reporter, Dr. John L. Marker, Davenport.

The speakers were Dr. Benjamin Orndoff, professor of roentgenology at the Chicago Medical School, who spoke on X-ray Diagnosis of Chronic Appendicitis; Dr. A. S. Warthin of Ann Arbor, Michigan, whose subject was Spirochaetal Disease; Dr. Dean Lewis of Chicago, speaking on Intestinal Obstruction; Dr. Rood Taylor of Minneapolis, Some Practical Points in the Management of the New Born; and Dr. Julius Grinker of Chicago, Epilepsy and Its Modern Treatment.

The Relation of Nose and Throat Infections to Pulmonary Tuberculosis, by Dr. R. P. Carney of Davenport; Insulin Treatment of Diabetes, Dr. J. H. Murphy of Geneseo, and Ectopic Pregnancy, Dr. H. J. Heusinkveid of Clinton.

Southwestern Iowa Medical Society

The continued rain for several days greatly interfered with the attendance at the semi-annual meeting of the Southwestern Iowa Medical Society held in Garden Grove, Thursday afternoon and evening, September 20, 1923, but those who were fortunate enough to be there enjoyed the exceptionally fine program, which embraced a number of well known specialists, including Dr. W. O. Bridges of Omaha, Nebraska; Dr. L. M. Randall of Iowa City; Dr. Lee F. Hill of Des Moines; Dr. C. B. Taylor of Ottumwa; Dr. Alfred W. Adson, Mayo Clinic, Rochester, Minnesota, who spoke at the afternoon session. The visitors were entertained by the local doctors at a six o'clock dinner served by the ladies of the Christian church. At the evening session there was a fine talk by Miss Edith Countryman, director of health education for the Tuberculosis Association, who told of the good work which has been accomplished by school and county nurses. Dr. F. E. Sampson of Creston, field director of the Iowa State Medical So-

ciety, gave a fine talk on "Taxes," telling how your money paid in taxes is spent and of the benefits which you receive, and especially stressed the importance of having the county hospital built, for which the people of Decatur county are now paying taxes, comparing the loss of a single human life for want of hospital facilities to the monetary consideration. Dr. Sampson is a very interesting talker, and his address was greatly enjoyed by all who were privileged to hear it.

The following officers were elected for the coming year: President, Dr. F. A. Bowman, Leon; vice-president, Dr. John C. Parsons, Creston; secretary, Dr. J. S. Coontz, Garden Grove.

The next meeting will be held at Creston.

J. S. Coontz.

HOSPITAL NOTES

Arrangements have been made for members of the board of trustees of the Burlington Hospital to visit Iowa City and perhaps Des Moines and Davenport.

Plans are nearly completed for the new addition to Burlington Hospital which will be a magnificent building equipped in the most modern manner and will provide additional laboratories, operating rooms and rooms for patients, some of the latter to have a private bath.

Announcement has been made that a campaign will be conducted to raise \$200,000 to build a Lutheran hospital at Ft. Dodge.

Plans are being considered to build a new wing to St. Joseph's Mercy Hospital at Ft. Dodge at a cost of \$250,000.

PERSONAL MENTION

Dr. C. C. Parriott of Essex will move to Clarinda, where he will continue the practice of medicine. Dr. Parriott practiced in Essex fifteen years.

Dr. T. J. Burke, formerly of De Witt, who has been practicing in Wichita, Kansas, for several years, has located in Davenport, where he will specialize in surgery, gynecology and obstetrics.

Dr. Roy Owen is to return to Osage where he will practice medicine.

Dr. R. C. Sebern, formerly of Odebolt, has located in Ft. Dodge, where he will be connected with the Physician's Clinic as eye, ear and nose specialist.

Dr. D. S. Fairchild of Clinton has been named chairman of the national health examination movement in Iowa which was originated by the National Health Council in New York in co-operation with the United States Public Health Service at Washington. Dr. Fairchild is editor of the Journal of the Iowa State Medical Society.

Dr. John Joseph Collins, formerly of Mercy Hospital staff, an able alumnus of the S. U. I. College of

Medicine, has decided to locate in Oxford where he will henceforth practice doubtless until a large field opens alluringly.

Dr. Carpenter has been appointed physician and surgeon for the Northwestern railroad in Tama, and Dr. Wm. Corns is assistant physician.

Mr. and Mrs. F. D. Light delightfully entertained at a community picnic held in the city park, Montezuma, September 10, the occasion being in honor of Dr. and Mrs. T. B. Keene of Cedar Falls, who have been guests the past week at the Light home. About fifty were present to enjoy the occasion and to renew old acquaintances. Immediately after all had assembled, tables were arranged to accommodate the guests and a bounteous picnic dinner followed. Dr. and Mrs. Keene were former Montezuma residents, having come to Montezuma about forty years ago. The Doctor practiced medicine here for some time, later moving to Grinnell and then to Cedar Falls, where they now reside.

Dr. Ada North, Rock Rapids, has decided to resume the practice of her profession—medicine—and has already reopened the office occupied by her late husband, Dr. J. E. North, in the Pierce block. Mrs. North is a graduate physician, having attended school at the same time as her husband, and for several years followed her profession.

Dr. and Mrs. Bosch have left for Cok, China, where they will have charge of a mission hospital. They have been on a fifteen months' leave of absence in the United States.

Dr. Wilbur S. Conkling, well known physician, has reached the half century mark. Dr. Conkling was born near Mount Pleasant, Iowa, and attended Iowa Wesleyan University there. He took a business course at Highland Park College and later graduated from the pharmacy department and medical school of Drake University. Dr. Conkling served in the Philippines during the Spanish-American War with the Fifty-first Iowa. He went overseas in the World War with the One Hundred and Sixty-eighth Regiment and returned with the rank of lieutenant-colonel in command of the Sanitary Train of the Forty-second Division. He is now connected with the state public health department and is chief surgeon for the Iowa National Guard. His hobbies are flower gardening, fishing and hunting.

Drs. F. F. Hall and Bert Fellows of Webster City have formed a partnership which will specialize in eye, ear, nose and throat diseases. The firm will take over the practice of Dr. C. J. Reed who will retire to his ranch in Wyoming in an effort to benefit his health.

Dr. W. W. Bowen and Dr. George Gibson have been appointed to work on the advisory board of the Lutheran Hospital campaign to represent the Webster County Medical Society.

Dr. Benjamin Dvorak, recent graduate of the University of Minnesota and a valuable member of the Gopher grid machine for two years, has been induced to come to Iowa State College to act as medical ad-

viser for varsity and intramural athletes, Dean S. W. Beyer, head of industrial science by whom the hygiene and athletic departments are administered, announced. Dr. Dvorak was secured only after a number of personal interviews and much correspondence. While a student in the medical college at the University of Minnesota Dr. Dvorak made a specialty of diagnosing sprains, fractures, bruises and other ailments common to football players. He will be expected to direct the treatment of all students who need medical attention as a result of athletic activity. Dr. Dvorak will be on the staff of Dr. James F. Edwards, head of hygiene department. "We estimate that fully one-half of Dr. Dvorak's time will be required in the department of physical training," said Dean Beyer. "His appointment was authorized in the annual budget and it has been approved by President R. A. Pearson." When the World War broke out in 1917 Dr. Dvorak left his studies at the university, enlisting in the army as a "buck" private. On his return he became closely associated with the student health work at the Minnesota institution where he served an internship in a large hospital. In addition to his duties as medical advisor in the athletic department, Dr. Dvorak will prescribe special exercises for students who have physical defects. Each year, according to Dr. Edwards, hospital head at Iowa State College, men enter school, who for one reason or another cannot go into the regular physical training classes. Heart irregularities, ruptures, and such defects as crooked spines, round shoulders and flat feet, can be much improved and sometimes cured, by proper exercise.

Dr. Sumner B. Chase of Ft. Dodge has severed his connection with the Physicians' Clinic and will open offices in suite 208-213 Carver building.

Dr. B. A. Melgaard of Sioux City is taking a months' work at Dr. Wm. McKim Marriott's Children's Clinic, Washington University, Saint Louis.

MEDICAL NEWS NOTES

Because small-pox caused scars on his face, which prevented his public appearance as a hearse driver and an attendant at funerals, Otto Knight, an undertaker's assistant, has been awarded \$2,145 as partial disability compensation by the state industrial act commission today. Knight alleged he contracted the disease while attending to his duties as an undertaker.

Dr. Earl Miller has been appointed director of the department of experimental medicine of Parke, Davis & Company, Detroit, to fill the vacancy following the death of Dr. Ezra Read Larned, who was the originator and organizer of this department and occupied the position as head of the department until his death. Dr. Miller was assistant to Dr. Larned for twelve years and has a wide acquaintance among medical men interested in clinical research work.

THE NEW COMPETITION

Many progressive manufacturers and merchants say that the cut price bait is losing its attraction. They are paying less attention to this method of getting more business, and more attention to the idea of quality merchandise service. They believe the results so far achieved justify the statement that their customers will be better served and their own profits enhanced by giving more attention to quality, and less to price.

Real service is what counts. While many people will shop about for prices, the great majority are better satisfied with quality merchandise and good service at a fair price. This makes for confidence—the cornerstone of satisfaction.

Mr. Charles Wesley Dunn, counsel for a number of large manufacturers in this country, has given this problem a great deal of thought. His conclusion is that we are now approaching the time when the real competition will be in merchandise and service rather than in price.

As a nation, we have developed to the highest degree the science of quantity production. Now, with characteristic American progression, it is only natural that we are experiencing a very definite trend toward the development of quality production.

MARRIAGES

Dr. E. W. Johns of the Iowa State College students' health department and son of Mr. and Mrs. Wm. Johns of this place and Miss Mayme Jongeward of Orange City were united in marriage at Orange City on Wednesday, September 12 in the home of the bride.

OBITUARY

Dr. Amos Babcock, seventy-nine years old, prominent New Hampton physician for fifty-three years, died suddenly at his home Thursday morning, August 23. He had been confined to his home for some time, but was not considered seriously ill. He is survived by his wife and his son, Commander Vincent Babcock, now in charge at Honolulu.

Dr. John P. Muskens died at St. Vincent's Hospital, Sioux City of appendicitis, August 3, 1923.

Dr. Muskens was born December 12, 1896, on a farm near Alton, Iowa. He received his preliminary education at the Northwestern Classical Academy, Orange City, and at Hope College, Holland, Michigan, and his medical degree from Rush Medical College, Chicago.

Dr. Muskens was married to Miss Louise Lee Swank on March 24, 1922. At the time of his death he was practicing at Armour, South Dakota.

Dr. Chas. McKinnis was born in Vinton county, Ohio, April 22, 1851. He was the son of Jesse and

Allie Wilson McKinnis. In 1863 the family moved to Jefferson county, Iowa, moving three years later to Washington county near Brighton, where the Doctor married Miss Laura McCarty, who preceded him in death five years.

Dr. McKinnis attended Whittier College at Salem, Iowa, in 1870, taught school for several years, graduated from the Keokuk Medical College, and later took post-graduate work in Chicago. He began the practice of his profession at Iota in 1876 and continued it until his retirement about two years ago. Soon after the death of Mrs. McKinnis in 1918 he moved to Fort Morgan, Colorado, to care for his daughter, Mrs. C. A. Hinshaw. He returned to Iowa in March and made his home with his daughter, Mrs. C. W. Long, until his death on Wednesday, September 5, 1923.

Aaron Browdy Ogden was born December 12, 1859 at East Liverpool, Ohio. His parents were Benjamin and Kathryn. The father, Benjamin, was the first physician in East Liverpool, where he practiced for fifty years. His son Charles B., also practiced in the same city for the same length of time, having passed away just this last April. The brothers both suffered the same affliction, apoplexy. Dr. A. B. Ogden graduated from the Eclectic Medical College, Cincinnati, Ohio, receiving his M. D. in June, 1884.

He was married September 23, 1884, to Miss Alice Standish of New Cumberland, West Virginia. The home was established at Mount Ayr, Iowa, where the Doctor practiced medicine for twenty-nine years. Dr. and Mrs. Ogden moved to St. Charles in November last year where he followed his profession until health failed and he was stricken down. After ten weeks of illness he passed way at his home on September 3, 1923.

BOOK REVIEWS

1922 COLLECTED PAPERS OF THE MAYO CLINIC, ROCHESTER, MINNESOTA

Edited by Mrs. M. H. Mellish; Octavo of 1394 Pages; 488 Illustrations. W. B. Saunders Company, 1923. Cloth, \$13.00 Net.

This is the fourteenth volume of the papers issued by the Mayo Clinic and maintains the general character of the preceding volumes. In this volume a list of eighty-seven contributors is given, included in ten divisions. It will be quite impossible to consider more than a few individual papers.

Under the division of "Alimentary Tract" is grouped twenty-eight titles. The introductory paper is by Dr. C. H. Mayo under the title: "Treatment of Diverticulum of the Esophagus." Another paper in this group is by Rigmald Fitz, "In Behalf of the Stomach Tube." Dr. Fitz is of the opinion that there is a growing tendency among physicians in this country to underestimate the value of the stomach tube, and therefore makes a plea in behalf

of the tube, particularly in relation to the clinical interpretation of roentgenologic findings. "Toxic Manifestations of Ulcer of the Stomach" is an interesting contribution of Drs. Leo L. J. Hardt and Andrew B. Rivers.

Dr. W. J. Mayo presents a discussion on the "Progress in the Handling of Chronic Peptic Ulcers." Dr. Donald C. Balfour presents two interesting papers: "Life Expectancy of Gastric Ulcer Patients" and "Hematemesis," both associated as factors in life expectancy. Dr. Balfour has studied these valuable considerations with much care in these and other contributions. Dr. W. C. MacCarty reviews in a conservative manner the question: "Does Cancer Arise in Chronic Gastric Ulcer?"

Drs. Frank C. Mann and T. B. Magatt present some studies on the "Physiology of the Liver." A series of papers appear on the "Biliary and Pancreatic Systems," which, taken together, are of great value.

Dr. W. J. Mayo presents a paper on a disease but little known by the profession generally: "Multiple Serositis or Concato's Disease."

Dr. Russell D. Carman presents some observations on the "Roentgenologic Signs of Cancer of the Colon," and Drs. Bowing and Anderson on "Treatment of Cancer of the Rectum by Radiation."

We now come to the section "Urogenital Organs," nineteen papers. The first paper is "Renal Torsion," by Dr. William F. Braasch. Only a few of these papers may be selected for special mention. One, a short paper on "Drug Therapy in Pyelitis" by Dr. Harry F. Helmholtz, who reaches the conclusion that: "In acute cases of pyelitis the alkalis are useful, but we have no evidence of any specific action. Hexamethylenamin has a very definite bactericidal action in the bladder, but whether this applies also to the pelvis of the kidney has not been demonstrated. Phenyl salicylate has not been found to have antiseptic properties in the doses given."

"Radium and Roentgen-Ray Treatment in Metastatic Testicular Tumors" is reviewed by Dr. Henry H. Bowing. This is an important contribution.

In the division "Ductless Glands" we can only mention the Jerome Cochran lecture: "The Thyroid and its Diseases," by Dr. C. H. Mayo, who reviews some of the important facts in this disease. In the division "Blood and Circulatory Organs" Dr. Leonard G. Rowntree presents an important paper on "The Water Balance of the Body." Dr. Rowntree has done considerable original work on this subject.

"Diseases Which May be Associated with Pernicious Anemia" is the subject of a paper by Dr. H. Z. Giffin and Dr. John P. Bowler. Under the head of "General or Miscellaneous" are a number of papers which we would like to mention particularly. "Limitations of Roentgenologic Diagnosis," by Dr. Russell D. Carman. "The Therapeutic Value of the Roentgen Ray," by Arthur U. Desjardins, which are of controversial interest and the opinions of men of vast experience go far to settle.

It is difficult to review such a repository of scientific knowledge, and we find ourselves able only to select a few subjects, which will indicate in a measure what this volume contains and to express our admiration of the patience and industry of the editor, Mrs. Mellish, in arranging the material for publication.

APPLIED PSYCHOLOGY FOR NURSES

Lippincott's Nursing Manuals: By Donald A. Laird, Assistant Professor of Psychology. University of Wyoming. Price \$2.50.

This book is the result of an attempt to select from the vast literature of psychology those facts that will be of most immediate aid to nurses in understanding the patient, themselves, and their fellow-men, as organisms that act, think, and feel. The author has endeavored to avoid all controversial matter that is not borne out by fact. The point of view from which the facts are presented is biological. This does not alter the fact or applications. But it does seem to further the intelligent understanding of the behavior of human beings.

The text of the book is divided into four parts. Part one is introductory in nature. Part two presents the biological foundations of behavior. In part three the more practical results of the biological adaptations at the psychological level are presented. In part four, certain aspects of mental hygiene, not taken up in other parts of the book, are considered. Such important questions as the Cause and Nature of Mental Ill-Health, Something about the Feeble-minded, How to Use Suggestion, What Should be Expected from Psychology in Medicine and Nursing, the Basis of Human Behavior, the Biological Foundations of it in the Origin of Man's Needs, Use and Abuse in Thought and How Behavior Indicates Mental Activities, the Temperaments in Nursing, and the Nurse and the Mental Health of the Nation are dealt with in such a way as to be of practical help to the nurse who would understand her own mental life and to the patient whose mental life should be understood by the nurse.

Contents—Part One: Introductory. What Should Be Expected from Psychology. Psychology in Medicine and Nursing.

Part Two—Foundations. Biological Foundations of Behavior. Man and Beast. Basis of Human Behavior. The Origin of Man's Needs. Simple Behavior in Man.

Part Three—Applications—Gaining Skills. Skill in Thought. Using Skills. The Temperaments in Nursing. Indications in Temperaments. Instincts of the Patient. Enter the Villain. How Behavior Indicates Mental Activities. Mental Activities and Bodily Ailments. Use and Abuse in Thought. How to Use Suggestion.

Part Four—Mental Health. The Nurse and the Mental Health of the Nation. The Nature of Mental Ill-Health. The Cause of Mental Ill-Health. Something about the Feeble-Minded.

MEDICAL STATE BOARD QUESTIONS AND ANSWERS

By R. Max Goepp, M.D., Professor of Clinical Medicine at the Philadelphia Polyclinic; Assistant Professor of Clinical Medicine, Jefferson Medical College. Fifth Edition, Thoroughly Revised; Octavo Volume of 731 Pages. W. B. Saunders Company, 1923; Cloth, \$6.00.

The purpose of this book is to present to the medical profession and students of medicine a list of questions and answers asked during the past four years. The list is taken from the boards of the larger states and will be of material aid to the student as giving him an idea of what will be expected at the examination. These are probably not the questions that will be asked him, but must necessarily be similar and certainly suggestive.

This book is not intended to make the state board examination easy, but to help him to frame his answers properly, not only will the book be helpful in his examinations, but he may derive an immense amount of information from its study independent of the examination. It is in fact a scientific exposition of the purposes of an examination for the practice of medicine, not to be laid aside after the examination is over, but for ready reference at any time.

THE SURGICAL CLINICS OF NORTH AMERICA

St. Louis Number, December, 1922. Published Bi-monthly. Price Per Year, Paper \$12.00; Cloth \$16.00. W. B. Saunders Company.

The influence of Washington University on the Surgery of St. Louis has been great. Of equal importance has been the Medical Clinics of North America, which has so importantly brought to the attention of the profession the medical and surgical activities of our great medical centers. The effect has been to bring to our large cities the active medical brains of the country.

The first clinic is by Dr. Evarts Graham and includes several surgical cases at the Barnes Hospital. The first of particular importance under the head of "Familial Hemolytic Icterus Associated with Pulmonary Tuberculosis and Old Tuberculosis of the Hip, Splenectomy, Cholecystectomy, Relief from Jaundice."

Followed by a Goitre Clinic, by Dr. Willard Bartlett at the Mission Sanitarium. Dr. M. G. Seelig presents an interesting clinic at the Jewish Hospital. Dr. Ernest Sachs presents an important clinic at the Washington University Medical School, and Dr. Harvey S. McKay at St. Louis University, including several cases.

Dr. Roland Hill contributes a paper on "Congenital Pyloric Stenosis" which is of especial interest. Dr. Hill has contributed much to this important subject.

THE SURGICAL CLINICS OF NORTH AMERICA

New York Number, April, 1923. W. B. Saunders Company, Price Per Year, Cloth, \$16.00, Paper, \$12.00.

The first paper in this number is by Dr. Fred H. Albee, on "Ununited Fracture of the Lower Jaw, with or without Loss of Bone." Dr. Albee is recognized as a master in this class of surgery. This paper is illustrated by numerous cuts, which add materially to its value.

Dr. William A. Downs gives one of his valuable clinics on "Hour Glass Contraction of the Stomach." An accident clinic is presented by Dr. R. W. Bolling of special interest. Dr. Charles Gordon Heyd presents a clinic and discussion on "Hydrops of Gall-Bladder," a subject of much clinical value.

Dr. Morris K. Smith gives a Fracture Clinic and Dr. Byron Stookey on "Insidious Paralysis of the Intrinsic Muscles of the Hand and its Operative Relief." These two clinics are of particular value.

This number of clinics is of unusual value, and will compensate for any weakness that may sometimes appear. All the papers and clinics are of high order of excellence and we regret that we cannot note them all.

EXERCISE IN EDUCATION AND MEDICINE

By R. Tait McKenzie, M.D., L.L.D., Professor of Physical Education and Physical Therapy and Director of the Department of Physical Education, University of Pennsylvania; Octavo of 601 Pages; with 445 Illustrations. W. B. Saunders Company, 1922; Cloth, \$5.00 Net.

We are coming more and more to recognize that other means than drugs have to do with the healing art and that prevention and increasing the natural resistance of the body are important factors to be considered. But as we review the drug shops of many physicians, we feel that the education of the physician is far from complete; it is so much easier to fill a bottle of "all sorts" than to study the real needs of the patient that in many communities the lessons taught in the universities will for a long time go unheeded.

The fundamental part taken in exercise is the development of the resisting power of the individual by stimulating the nutritive and metabolic processes in the various tissues of the body. That this may be done economically, a system of education has been taken up and its effects measured. The plan of the author of this book is, in the first place, to classify exercise and then consider the effect on the muscles, then on the heart and lungs. Account is taken of age, sex and occupation. The different systems of physical training are taken up and the merits of each considered. Municipal playgrounds and baths are presented and physical education in schools, colleges and universities as a part of the educational course. The first part of the book presents the different

forms of exercise in an attractive manner and many interesting illustrations added to the text, which renders the subject an interesting study.

Part second relates to the application of exercise to pathologic conditions, massage and vibrations. Then follows the mechanical means for massage and muscular reeducation. A great variety of mechanical devices are illustrated for different types of disability, as for flat-foot and club-foot, for stooped and uneven shoulders. For scoliosis, weakness of abdominal muscles, etc.

The book is well illustrated and interesting in every particular and should be in the hands of every teacher of physical exercise in schools and colleges.

The relation of exercise in the treatment of disease and every form of deformity is of so much importance that physicians will find material aid in referring to the chapters in the treatment of various forms of disease. Too much stress cannot be placed on works of this kind, because of the growing need of this kind of education in developing the strength and resistance of our young people.

CLINICS AND COLLECTED PAPERS OF ST. ELIZABETH'S HOSPITAL, RICHMOND, VIRGINIA

Volume of 1922, Contributed by the Staff.
Illustrated by Helen Lorraine. C. V. Mosby Company, 1923. Price \$7.50.

We again have the opportunity to commend the activities of universities and hospitals in presenting to the medical public the results of their work in specially prepared volumes. As an introduction, St. Elizabeth presents some of the features of management and administration from the superintendent's viewpoint, including the business management, by the business manager.

Many of the papers presented have appeared in important medical periodicals, but the collection and presentation in a single volume will have a feature of convenience and value for reference which will stimulate many physicians, surgeons and specialists to add this book to their reference library.

Following the introduction comes Chapter Two: "Clinics on Surgery and Urology." The first paper by Dr. J. Shelton Horsley, "Stricture of the Small Intestine, with Adhesions and Multiple Perforations" and by the same author, "Duodenal Ulcer." Dr. Horsley continues with a series of papers on intestinal surgery through the first four chapters, including a number of papers on blood-vessel surgery and other subjects, in some of these papers being associated with Dr. Warren T. Vaughn and Dr. Austin I. Dodson in certain medical features.

Chapter five relates to "Internal Medicine and Clinical Pathology, by Drs. Vaughn, Van Dyke, Dodson and O. O. Ashworth.

Chapter six, "Roentgenology," by Dr. Hodges. The papers referred to in chapters five and six have a certain relation to the surgical papers by Dr. Horsley, which render the volume more complete.

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WHAT IOWA IS DOING*

RALPH H. PARKER, M.D., Des Moines

It has been the custom of the chairman of this section to prepare a paper of scientific value for presentation at the annual meeting, but I wish to say some complimentary things about the progress being made in Iowa along medical lines, which are of interest to the members of the section of ophthalmology, otology and rhino-laryngology.

I do not think our law makers have been as slow and backward as the old time worn statement, "The Iowa farmer has plenty of money to fight cholera and tuberculosis in the hogs and cattle but little money for the welfare of the children and family" would indicate.

Early in the history of the state a school for the blind was established at Vinton where they were educated, taught trades and given medical care so that their vision might be restored as far as possible without expense to them.

The following blind pension law has been enacted: "All male citizens over twenty-one years and all female citizens over the age of eighteen years who are blind shall receive as a benefit a sum of not less than one hundred and fifty dollars per annum, payable quarterly. The board of supervisors of the county shall determine at their discretion what sum between one hundred and fifty dollars and three hundred dollars shall go to such citizens." Many counties in the state are making use of this law in providing a pension for the blind.

It is now compulsory for the attending physician to use silver nitrate or some drug of equal value in the eyes of the new born infant as a prophylactic against gonorrheal infection.

The workmen's compensation law has set a standard of value for the loss or partial loss of vision of one or both eyes and the financial benefits are conferred immediately. This law is enforced with fairness and justice in Iowa and is a very forward looking piece of legislation.

Investigation made during the war proved that for every case of venereal disease in the army there were five cases in the same number of people in civil life. This led to a clean up about the cantonments and out of this movement came our present organization in Iowa for the control and prevention of venereal diseases. This is a bureau under the state board of health and is in charge of Dr. Wilbur Conkling. We have a direct interest in this work as twenty-five per cent of the blindness in Iowa is due to gonorrhea and a large per cent is due to syphilis. Among the educational pamphlets sent out to the homes of Iowa are the following: "Keeping Fit," "Sex Education in the Home," "Man Power," "Law on Venereal Disease," "The Parents' Part," "The Girls' Part." Fourteen clinics have been established in Iowa where venereal diseases are diagnosed and treated free. This commission also enforces the law controlling venereal diseases. The work is being carried on by an annual appropriation of thirty thousand dollars. Without pressure being brought to bear the legislature this year voted the appropriation with but one dissenting vote.

There is a school for the deaf at Council Bluffs where special instruction makes it possible for deaf children to be educated. While the evolution from teaching the deaf by writing, finger spelling and the sign language to the modern training of speech and lip reading has been slow, our Iowa school has kept pace with the advances made in methods of teaching the deaf.

We are indebted to Dr. Henry G. Langworthy, a member of this section and chairman of the committee on conservation of vision and hearing of the Iowa State Medical Society for his aid in the establishment of schools for deaf children in any community in Iowa having a sufficient number of pupils. Five such schools have been established—one at Ottumwa, Dubuque, Des Moines, Sioux City and Davenport.

The Red Cross through its visiting and school nurses reports the following corrections were made during 1922: vision, 3560; hearing, 254;

*Address of Chairman, Section Ophthalmology, Otology and Rhinology, Iowa State Medical Society, Seventy-Second Annual Session, Ottumwa, Iowa, May 9, 10, 11, 1923.

nose, mostly adenoids, 4530; throat, mostly tonsils, 5983.

We may get some conception of the work being done in the state under the Perkins law when we know that the rural nurses of the state have nine hundred Perkins children under observation. The cost of taking care of the children committed to the state university under the provisions of the law from July the first, 1921 to July the first, 1922 was \$372,567, being an average of over \$31,000 for each month. During the same time 886 patients were admitted to the eye, ear, nose and throat clinic of the University.

An act for the promotion of the welfare and hygiene of maternity and infancy was made a law by the general assembly this year. This carries with it an annual appropriation of \$42,000. One-half furnished by the state and one-half by the federal government. This act enables inspection work to be done for children of pre-school age and of maternity cases. Co-operation is the key word of this law. They cooperate in every possible way with the local physicians and the local medical societies. In one township clinic recently held under this law, of one hundred ninety-five children examined thirty-four cases of diseased tonsils were found. Twenty-six had diseased teeth and seventeen mal nutrition.

The medical department of the University has been getting considerable attention from the general assembly this year. They voted millions for the building of a great medical department. To the members of this section who graduated from old Iowa in the early days without having seen an autopsy or a confinement case while in the University medical department, the present school with its resident instructors, large amount of clinical materials and its well equipped buildings and laboratories must seem like a dream come true. Iowa may some day have the best medical school in America. Now its two-year post-graduate course in eye, ear, nose and throat is excelled by none.

We are directly interested in the health nursing being done in Iowa. The first public health nursing association was founded in Davenport twenty-three years ago. Rural nursing service was established six years ago. Now there are over two hundred nurses doing public health nursing in Iowa. They are divided into four groups: (a) school nurses for city and rural schools, (b) visiting nurses for the sick in the homes, (c) dispensary or clinical nurses, (d) industrial nurses. Fifty-four nurses are doing nursing in the cities and larger towns of the state. In the same group of cities and towns there are sixty-eight

school nurses who reported 28,500 school children inspected during the past year. Of this number eight hundred had defective vision and two thousand seven hundred and seventy-six had defective throats.

There are now fifty-four rural school nurses working in fifty-one counties. They inspected last year 40,000 school children, finding 4,833 with defective vision, 11,000 defective throats, and 16,500, nearly one-half, with defective teeth.

The per cent of defects among those attending the rural schools is much higher than among those attending school in the cities and larger towns.

The rapid increase in the number of nurses doing rural school nursing is due to the work of the Red Cross. They had a large amount of money on hand at the close of the war and this money was used for rural school nursing. It is anticipated that the counties will carry on this work after seeing its benefits.

Owing to the number of associations carrying on health nursing some confusion and overlapping of work has occurred. In 1921 the state board of health established a Bureau of Public Health Nursing to oversee and coordinate the work being done by the public health nurses of the state. This bureau through its efficient secretary, Miss Anna M. Drake, is fast bringing co-operation among the public and semi-public agencies which are supporting public health nurses.

In addition to the health measures taken by the state and the nursing associations must be mentioned the various agencies more local in character. In Des Moines, societies that look after the sick and unfortunate have been combined into one clinic; The Health Center, which is the first of its kind and it is working out very successfully. The Health Center receives its patients from the Associated Charities, County Superintendent of Schools, Girls' Protective Bureau, Humane Society, Iowa Children's Home, Juvenile Court, Overseer of the Poor, Public School Attendance Officers, Public School Director of Child Labor, Public School Medical Inspector, Public School Nurses, Public School Supervisor of Ungraded Classes, Public Health Nursing Health Association, Parent Teachers' Association, Priscilla Club, Roadside Settlement, Red Cross Home Service, Society of the Friendless, Salvation Army, St. Monica's Home, United Jewish Philanthropies, Volunteers of America, Y. M. C. A., Y. W. C. A. Its medical staff is the Polk County Medical Society. It plans to cooperate with the physicians of Des Moines rather than to compete with them. During the past eight months the head surgery department has treated 2,338 patients; the medical

department, 1,409; pediatrics, 1,086; dental department, 1,160.

Iowa is not slow medically speaking. The Fortieth General Assembly just ended passed nineteen major health bills and defeated one. Every school in Iowa will have health instruction each week. Teachers will be taught how to instruct in health matters and credits will be given for this work.

We have enough agencies at work in the state to look after the welfare of every child in every township in Iowa. There should be better co-operation between the different communities, bureaus and nursing associations, and there will be. The Field Activities Committee of the Iowa State Medical Society with Dr. F. E. Sampson as field secretary is doing a great work in this line.

Tuberculosis has decreased 50 per cent in the last fifty years. There were 5,000 fewer blind persons in America in 1920 than in 1910. Industrial accidents which account for many cases of blindness are being lessened.

Ophthalmia neonatorum is less prevalent. The hospital set aside for the treatment of children having ophthalmia neonatorum at the Massachusetts General Hospital has been closed for lack of patients. The past ten years blindness among babies has been cut in half.

I am glad that Iowa is doing its full part to bring about better health conditions among the people of this great state.

MASTOIDITIS IN INFANTS*

WM. H. JOHNSTON, M.D., Muscatine

The prevalence of discharging ears in infants should impress on the practitioner the need of more careful and systematic examination of infant's ears in order to arrive at a correct diagnosis. Some years ago the most frequent condition diagnosed in infants was some form of gastrointestinal disturbance. Today, the ears of these babies are being more closely observed and it is surprising to find so many of them with ear involvement, which, when given attention will give relief from the symptoms. It is due to the fact that during the past few years I have observed several very striking examples of this class of cases, that I chose this topic for discussion.

At the University of Iowa Dr. L. W. Dean and Dr. A. H. Byfield have found infected ears and mastoids to be the common cause of many dis-

turbances formerly attributed to the gastrointestinal tract. Temperature can not be relied upon in making a diagnosis and in the ear we may not even have a bulging or reddened tympanic membrane. The tympanic membrane will usually have a gray appearance, sometimes pink, and the landmarks will be altered. Renaud in a *Paris Journal* states that he is convinced that the suppuration in the temporal bone is almost exclusively responsible for the mortality of young children.

In seventy autopsies performed in 1921—he found extensive suppuration in the temporal bone in every case. The histories of all were quite similar. Had been living under poor hygienic conditions, were weak and had a bad family history. On admission they showed a syndrome manifested by emaciation, signs of infectious intoxication, vomiting and diarrhea. The remarkable finding was the extensive and nearly always bilateral suppuration in the temporal bone.

In not a single case was a gastroenteritis confirmed by autopsy. Dr. Dean has reported several cases where ear disease was not suspected and on autopsy antrum suppuration was found.

Bar found evidence of mastoiditis in infants who died a few days after birth, and he was of the opinion that the infection entered the ears while the infant passed through the birth canal. The streptococcus was the organism found in the ears and the mother was found to be infected with a similar organism. In the discussion of Renaud's paper it was suggested that a possible explanation of the presence of pus in the mastoid antra after death was that it passes up the Eustachian tubes from the naso-pharynx. This seems physically impossible and does not satisfactorily explain the findings.

The point to be emphasized here is the importance of ear examinations in the course of any general disease and especially the exanthemata. In doing this we will perform a double duty, first by saving life and second by preserving the hearing. A large percentage of the cases of impaired hearing and deafness could be prevented and the same may be said of deaf mutism. Neglected otitis media leads to mastoid involvement with all of the attendant dangers. In every case where there is a continued abundant discharge with an increase in the temperature, even in the absence of redness or swelling of the mastoid process, we should suspect a mastoiditis. A continued high temperature in the absence of other evidence of mastoiditis is not sufficient reason for opening the mastoid. A brief report of two cases from

*Presented before the Seventy-Second Annual Session, Iowa State Medical Society, Ottumwa, Iowa, May 9, 10, 11, 1923, Section Ophthalmology, Otology and Rhino-Laryngology.

the literature and one personal case will serve to illustrate these points.

Case One—An infant eighteen months of age, very restless, temperature 105° , tympanic membrane of both ears bulging. Double myringotomy was performed and a quantity of serosanguinous fluid was evacuated from each middle ear. The temperature dropped to 100° but the child continued to be very restless. The next day the ears were draining freely and there was no evidence of extension, but the temperature was 105° . The white cell count was 16000 with 70 per cent polymorphonuclears. The next four days there was no change in the condition. The integument over the mastoid process appeared normal, the laboratory report on the pus from the ears was pneumococcus. Many consultants were called and a most thorough general examination was made many times. Each time the parents were assured that all the symptoms were due to the ear condition. It was finally decided to do a mastoid operation, but before this was done, a central pneumonia manifested itself and relieved the difficulties of the situation. This possibility should always be borne in mind when dealing with this class of cases.

Case two was an infant three years old. A right myringotomy had been performed within a few hours of the febrile onset. Organism reported was the streptococcic mucosus. For several days the condition progressed satisfactorily, the temperature not going over 102° . On the fifth day the child had an attack of vomiting and the temperature went to 105° . There was nothing in the ears to account for this sudden rise and it was attributed to a gastrointestinal disturbance. A large dose of castor oil was administered. The white cell count was 12000 with 72 per cent polymorphonuclear. For some days the condition was unchanged and the parents insisted on a mastoid operation. Contrary to the advice of the attending otologist a mastoidectomy was performed and a normal mastoid was found. Two days later the cause of the temperature was revealed in a large quantity of pus in the urine. A few days previous to this the urine was examined and was reported negative.

Pyelitis and central pneumonia, especially in infants, are frequent causes of a mysterious temperature. We may also be too conservative in our interpretation of the temperature symptom as shown in case three.

Case Three—A personal experience with a child on whom I had operated for removal of adenoids and tonsils. About two weeks previous he had an acute otitis, a myringotomy was performed and he had apparently recovered. On the evening of the operation his temperature was 104° . As usual it was attributed to the gastrointestinal tract and he was given a cathartic. The next morning the temperature was normal but in the evening was 105° . The third day it did not go so high, he felt well and left the hos-

pital. The ears had been examined and nothing abnormal was found. The first day at home his temperature again went to 105.5° and this daily rise continued for a week when an x-ray picture was taken of the mastoids. This revealed a cloudy mastoid and was supposed to account for all the trouble. A mastoidectomy was performed and the cells were found to be filled with pus. This, however, did not change the temperature, which continued to reach 105° daily. At the end of a week or ten days the lateral sinus was opened, an infected clot removed and the jugular was ligated. The temperature gradually returned to normal and the recovery was uneventful.

Undoubtedly this patient had trouble in the ear when the throat operation was performed, but there were no subjective nor objective symptoms present. I see no way that this particular incident could have been avoided.

In the past few months I have seen three infants with well developed mastoid symptoms and found the tympanic membranes intact. In one of these a large sub-periostial, an abscess had formed. The membrani tympani were not red, but they had a gray lustreless appearance and the landmarks were altered. When incised there was a free flow of pus from the middle ear.

To recognize the signs of mastoid disease in infants we must familiarize ourselves with the normal structural relations of the infant ear. The location on the antrum, the length of the bony canal, the position of the ear drum. Whiting has never seen a case of mastoid disease in an infant without edema of the supero-posterior segment of the membranous canal, and boggiess of the structures about the annulus. It is safe to wait for these signs to appear before operating. The blood count supplies very little evidence of use in making a diagnosis. The x-ray in infants is unsatisfactory because they are usually too restless to insure a proper exposure.

In the past few years I have observed many infants who had persistent high temperatures, some extending over a period of from three to five weeks, where the family physician could find no cause. They were referred for ear examination and a gray, lustreless boggy appearing membrane was the only finding. On incision a free flow of pus came from the middle ear, and the temperature returned to normal. On three or four occasions it was necessary to do a second myringotomy. Displacement of the auricle we have all seen and this edema may extend forward and be quite apparent in the eyelids. Pressure over the tragus will usually elicit a cry of pain. Dr. Byfield has mentioned a test that he makes on these infants, he increases the pressure by a sudden thrust of the tip of his finger into the

canal, this will be followed by a cry of pain. Aspiration of pus from the middle ear by the use of a syringe may give us valuable information.

Narrowing of the canal is a very common symptom, and owing to the location of the antrum this narrowing will come more from above than posterior.

Subjective symptoms in an infant are unreliable, but the sudden cry of pain, restlessness at night, pulling at the ear and putting the finger in the canal, are points, about which we should make inquiry.

Treatment-Prevention—In the new born cleanse the nose as well as the eyes and put a few drops of the argyrol solution into the nose. Frequent observation of suspected cases are early myringotomy under general anesthesia if indicated. The nasal sinuses should receive attention if necessary. We should not allow a suppuration to continue long enough to destroy the ear drum and start a necrosis of bone. A simple operation is attended in skillful hands by practically no mortality, and may cure the patient and restore the hearing. Delay in operation can only increase the danger to the patient and reduce the hearing. Some of these patients will get well spontaneously, but the danger of intracranial complications and the development of chronic discharging ears is too great a risk.

As soon as a diagnosis is made we should institute free drainage and remove the necrotic tissue. Incision of the tympanic membrane is beneficial if free drainage from the middle ear does not already exist. The prime necessity in young infants is to locate the mastoid antrum and remove the overhanging bone. The antrum is relatively large and this usually gives sufficient drainage. Care should be taken to not make undue traction on the canal side of the wound.

All the mastoid cells should be removed and while we do not expect to find many cells before the age of three years I have seen many infants of two years where the adult type was closely approached. In the after treatment I do not use irrigation, but depend on gauze drainage, changing the drain daily after the third day following operation. A sometimes troublesome skin infection may be avoided by covering the area around the wound with vaseline or some soothing ointment.

In conclusion I desire to emphasize the importance of more frequent aural examinations in infants. Early and ample myringotomy, even when only slight objective symptoms are present. It can do no harm and many times will prevent serious complications. Give attention to the nasal sinuses in order to prevent extension to the middle

ear. Early mastoidectomy as soon as a diagnosis is established.

To be suspicious of mastoid involvement in every child, who has a profuse aural discharge continuing for more than two weeks, if this is accompanied by an increase in temperature not attributable to other causes.

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DIFFERENTIAL DIAGNOSIS BETWEEN INFECTION OF BONE AND SAR- COMA OF BONE*

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To make a differential diagnosis between an osteogenic sarcoma and infection in bone may tax the diagnostic ability and facilities of the most experienced surgeon. An error in diagnosis may prove a tragedy, on the one hand denying the patient a chance for life which is at best a slight one, and on the other sacrificing a limb needlessly. How frequently errors are being made in diagnosis of such bone lesions is strikingly shown by Codman¹, who originated the "Registry of Cases of Sarcoma of Long Bones." He states that about 50 per cent of cases reported for registration as sarcoma of bone are clearly inflammatory lesions, non-malignant growths, metastases to bone or tumors of other tissues than bone.

There are no short cuts to the diagnosis. No single sign nor symptom including the x-ray findings is absolutely diagnostic and even the histological picture may confuse the most eminent pathologist. One must analyze, therefore, the symptoms, the physical findings and the laboratory examinations with due regard to the value of each in any given case before arriving at a conclusion.

This paper is based on a study of seventeen cases of sarcoma of bone admitted to the surgical service of the department of surgery of the University Hospital, from January 1, 1915 to March 1, 1922. During this same period there were admitted 251 cases of pyogenic infection of

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1. Registry of Cases of Sarcoma of Long Bones—Surg., Gyn., and Obst., vol. xxxiv, March, 1922, number 3.

bone, hematogenous in origin. Of these seventeen cases of osteogenic sarcoma the clinical diagnosis was checked positively in eleven by histological section obtained at operation or at autopsy. In four the clinical course verified the diagnosis quite conclusively. In two there was a definite difference of opinion as to the clinical diagnosis, which was not cleared up by the autopsy findings.

The infections of bone which may simulate or be simulated by osteogenic sarcoma are in the order of their importance, subacute or chronic pyogenic osteomyelitis, tuberculosis and syphilis. It is equally important that the diagnosis be made between infection and the benign tumors of bone and between the latter and true sarcoma.

GENERAL CONSIDERATION INCLUDING HISTORY

Age—Hematogenous infection of bone is essentially a disease of adolescence and becomes increasingly less frequent after twenty years of age. It is uncommon after thirty except as the lighting up of a focus that has lain dormant since childhood. The average age in this series of sarcoma was 27.6. This is about the same as in Meyerding's² series of 109 cases—26.7. More than half of the cases were over twenty. The oldest patient was seventy-two and the youngest ten weeks. The latter case was a congenital osteogenic sarcoma of the tibia—a very rare tumor—and the patient was alive and well two years following an amputation through the thigh. There were ten males and seven females.

The history of trauma is obtained frequently in both infection and sarcoma. It was present in ten of the seventeen cases of sarcoma, or 59 per cent. In a series of twenty-five consecutive cases of osteomyelitis trauma was present only six times or 24 per cent.³ The trauma in either is usually a single direct blow of considerable severity, and may precede the symptoms from several months to only a few days. In either there may be no interval of quiescence between the symptoms referable to the trauma and those caused by the tumor or infection. Less commonly it is a repeated insult such as is obtained in the patient's occupation. In osteomyelitis there is oftentimes obtained the history of some original focus of infection, such as furuncles or tonsillitis, preceding the bone infection.

The onset in both subacute osteomyelitis and sarcoma is usually with pain. Early it is described as a dull ache which is made worse by exercise and keeps the patient from sleeping. If the pain becomes increasingly severe and is not

accompanied by the general reaction of infection, then sarcoma is strongly suggested.

Swelling often comes on early in sarcoma and increases. It is practically always a symptom, and by the time the patient consults a physician, it may be quite marked. It is usually diffuse in the area of involvement. In subacute and chronic osteomyelitis the swelling is likely to be very gradual in onset and limited to the immediate area of bone involvement. If the swelling is of more rapid onset it is usually associated with definite local and general symptoms of infection.

Limitation of motion independent of pain is not infrequently a very early symptom in sarcoma and may become marked. It is not so common early in low grade bone infections. In either case contracture of the neighboring joint may take place.

Pathological fracture may be the first symptom of osteogenic sarcoma. But this is not common. It also may be the first symptom of a low grade osteomyelitis. Pathological fracture is very much more likely to occur as the initial symptom in bone cyst, benign giant celled tumor of bone and in carcinomatous metastasis in bone, than in either osteogenic sarcoma or osteomyelitis.

Tenderness is often a marked symptom in sarcoma arising from the periosteum. It was noted especially in five of our seventeen cases. It is usually most marked in the rapidly growing highly malignant tumors, and is frequently associated with local heat and occasionally local redness if the involved bone is subcutaneous such as the tibia or lower end of the femur. In some cases tenderness will not be complained of unless the patient strikes the area involved. In subacute and chronic osteomyelitis tenderness is seldom an outstanding symptom unless the infection has extended through to the soft tissue and in such cases the local and general reaction to infection should be definite.

Fever is present in about half of the cases of osteogenic sarcoma and is irregular. The fever peaks tend to be low—99.5 to 100.5—but an occasional case will have a febrile course with reactions as high as 102 to 103. Generally speaking the febrile reaction varies directly with the degree of malignancy and the rapidity of growth of the tumor. In subacute and chronic osteomyelitis fever is often absent, or it may be low. When infection in bone is acute enough to produce a high fever, associated symptoms of osteomyelitis are usually sufficiently marked so that sarcoma is not suggested by the clinical picture.

Multiple bone involvement is rare in sarcoma except as metastases occur from the original

2. Meyerding—Sarcoma of the Long Bones. Surg., Gyn., and Obst., vol. xxxiv, March, 1922, No. 3.

3. Beye—Journal Iowa S. M. Soc., November, 1917.

tumor. These metastases may take place early but usually are a relatively late occurrence and at a time when the original growth is unmistakably malignant. The involvement of two or more bones by pyogenic infection is quite common, either as a simultaneous infection or with a varying interval of time elapsing between the attacks on the various bones. Multiple bone involvement is strong evidence for infection.

In sarcoma of the vertebra—of which there were four cases in this series—the differential diagnosis must be made from Potts disease especially. The onset is usually with pain at the site of involvement, and often with severe pain referred along the course of nerves involved by pressure from the tumor. Incontinence of urine and feces was present in three of the four cases. Subacute pyogenic spondylitis is relatively uncommon but may resemble a sarcoma very closely.

FINDINGS ON EXAMINATION

Physical—In osteogenic sarcoma of the long bones a swelling may usually be made out connected with the bone. This varies in consistency from that of bone to doughy depending upon its size, cellularity and vascularity. If very vascular it may pulsate and a bruit may be heard over it. The swelling may be indistinguishable from the overlying soft tissues which are often infiltrated. The outlines of the neighboring joint may be obliterated by the swelling and by an effusion into the joint.

Tenderness varies considerably. It may be exquisite and will permit of only the most superficial palpation. In the less malignant and more deeply seated cases tenderness may be absent except as a deep bone tenderness. There may be definite local heat over the swelling and the overlying veins if dilated are strongly suggestive of bone sarcoma. The latter finding was present in only one of our cases.

In subacute and chronic osteomyelitis the swelling is often confined to the bone, which is thickened and may be irregular in outline. Tenderness is usually not marked and is elicited by pressure directly over the bone involvement. Even if the soft tissues are indurated from long continued inflammation, the tenderness is usually not great unless an abscess lies outside the bone.

In both sarcoma and pyogenic infection, there is uncommonly any atrophy of the involved limb.

Careful examination of the chest should always be made to determine the presence of pulmonary metastases in a suspected case of osteogenic sarcoma. Such findings may be present without any symptoms suggesting them. It may be impossible

to distinguish between pulmonary tuberculosis and sarcomatous metastasis by physical examination alone.

Laboratory—The leucocyte count is variable in bone sarcoma. In our seventeen cases the average white cell count was 9,310. The highest was 16,320 and the lowest 6,100. There was a low relative increase in the polymorphonuclear cells. In only one case were myelocytes found in the stained specimen.

In low grade bone infection either pyogenic or tuberculous—the leucocyte count averages around 11,500. In cases in which the local symptoms of pain and tenderness are quite marked and in which the soft tissues have reacted to the infection, the white count is very likely to be increased definitely. This is not necessarily true of sarcoma. In our cases several had marked pain and tenderness and a febrile reaction with a normal white cell count.

In cases in which tuberculosis of bone must be considered in the diagnosis, a tuberculin test must not be omitted and will often be of the greatest value.

A Wassermann test should also be made as a routine in all cases. A gumma of bone may closely resemble a tumor of bone. It is relatively uncommon. A localized leucic periostitis may also simulate a periosteal sarcoma, and in the absence of a leucic history or other findings of the disease, the diagnosis may only be made by the Wassermann test or the therapeutic test.

The x-ray plate is the most important single evidence obtainable for diagnosis aside from an histological section. It is not absolutely diagnostic by any means. In the typical case of actively growing osteogenic sarcoma originating in the periosteum one sees in the x-ray fine indefinite and irregular lines of bone radiating out from the periosteum to become lost in the indistinct borders of the soft tissues. This picture is characteristic and is not simulated by any other pathological process of bone. In some cases there will be seen a fusiform swelling of the periosteum with well defined outlines. If the cortex and medulla are intact this picture strongly suggests sarcoma. If the lines of the cortex are broken and moth eaten, and the periosteum shows a definite proliferative reaction, this may be indistinguishable from infection of bone. In some osteogenic sarcomata the production of bone in the tumor will be marked and the x-ray picture may closely simulate that of cases of sclerotizing osteomyelitis.

Subacute and chronic bone infection characteristically stimulates the production of bone from

the overlying periosteum at the same time that the cortex and cancellous bone is being attacked. This periosteal reaction may sometimes be lacking even in cases in which the cortex is sufficiently destroyed to allow of a pathological fracture. A well localized bone abscess—so-called Brodies abscess—usually presents a definite x-ray picture which should not confuse.

Aspiration into and around a suspected tumor through the intact skin is often of inestimable value. Pus may be obtained and the diagnosis of infection made. In two cases of osteogenic sarcoma the aspirating needle obtained blood from the substance of the tumor—itsself suggestive of the true condition—and sarcoma cells were demonstrated in clumps in histological sections made of the blood which was allowed to clot. This method was recently used successfully in a case of metastasis to the ilium from hypernephroma.

A differential diagnosis may be impossible without exposure of the pathological process. In my opinion this procedure is not justified if there is a strong suspicion of osteogenic sarcoma and if the condition is inoperable provided it is sarcoma. In such cases the value of intensive x-ray treatments should first be tried out. Exceptions to this are in cases of osteogenic sarcomata of the vertebrae in which laminectomy is often indicated to relieve the intolerable root pain.

In cases which would allow of amputation in case osteogenic sarcoma is diagnosed a constrictor should always be placed proximal to the tumor before incision is made into it. A positive diagnosis may usually be made between tumor and infection by the gross appearance of the pathological process. In one of our cases however in which the pre-operative diagnosis had been made of a sarcoma of the femur, pus was found under the periosteum and an operative diagnosis was made of osteomyelitis. The pus proved to be sterile on culture and the pre-operative diagnosis was proven to be correct by the subsequent rapid growth of the tumor with early death of the patient.

In case a positive diagnosis is not tenable at operation, tissue must be removed for microscopical examination before a limb is sacrificed. This allows of an accurate diagnosis in the majority of cases, but an occasional mistake will be made by the most expert pathologist.

Discussion

Dr. Donald Macrae, Council Bluffs—The question involved in this subject is, why it is so important to differentiate between sarcoma and osteomyelitis or infection of bone. This problem is today very much more important than it was formerly because a great

many sarcomas as they are now understood are better treated by x-ray or radium than by operation. In sarcoma of bone I think our goal should be to do away with surgical procedures and resort to radium or x-ray. I am not enthusiastic in advocating the x-ray for all conditions, in fact I am very much opposed to post-operative x-ray treatment for carcinoma, when the operation has been successful, but I am in favor of deep x-ray therapy for certain forms of sarcoma. I do not think Dr. Beye brought out the question of the therapeutic value of the x-ray in differentiating malignant bone sarcomas from infections of the bone. If we were to consider sarcoma as an entity, as one thing, then all cases could be treated alike. But I think the profession realizes that the investigation of bone tumors and sarcomas is today in its infancy—we really know very little about this subject. We speak of the round-celled sarcoma, when, as I understand it, the majority of authorities are anxious to discard the term round-celled sarcoma. We talk of the giant-celled sarcoma, but after all we should study the underlying cell which really produced this sarcoma, because we may have the giant cell in all sarcomata. The more giant cells you have the more scavengers you have, and such a sarcoma is perhaps the least malignant of all. Ewing says, "A small piece for diagnosis is generally hazardous." Therefore we should make differential diagnosis not only between infection and sarcoma, but between the various types of sarcomas. I think this can to a large extent be brought about by studying the history and the x-ray plates as well. I am satisfied that none of us could know a great deal about this subject when in a great institution such as the University of Iowa they have had only seven cases of sarcoma in five years. So our material is not great. The endotheliomas, myelomas, and sarcomas, osteogenetic type, the gliomas, all differ not only in their characteristic actions upon the part, but in the prognosis as well. The osteogenetic type, which looks like bone cyst, is the most malignant of all, nothing seems to help it. X-ray does not help. So why could we not utilize the x-ray for its diagnostic as well as therapeutic value? For instance, a diffuse endothelioma of the tibia will almost melt away under x-ray treatment. Why subject this patient to amputation or incision? It seems to me that in some of these cases we should wait for the therapeutic differential diagnosis of the x-ray, because we know that the malignant cases die anyway. Therefore let us take sufficient time to differentiate. Very acute cases often tax one to the limit. Only last week a case was brought into the hospital from out in Iowa, the attending physician bringing the x-ray picture. The boy had received an injury two weeks before. On seeing the picture it seemed to me like a very great destruction of bone for acute osteomyelitis. His temperature was 100, the leukocyte count was only about 7,000. One of the staff thought it was probably a sarcoma. I was on the fence. We questioned the advisability of radical procedure, rather we would have demonstrated the con-

dition by means of the x-ray or by simply perforating over the area. In acute hematogenous types of osteomyelitis we will usually find the affected area teeming with streptococci and staphylococci. This boy immediately disappeared and was examined by three or four men in Omaha, and I have since learned that his leg was amputated and a form of malignant sarcoma found. I am satisfied that in the past we have sacrificed a number of parts because of benign tumors of bone. I think we should be more conservative in the large majority of these cases to determine the type of sarcoma that may be present, differentiating these tumors as well as differentiating malignant growths from osteomyelitis.

Dr. Beye—The treatment of osteogenic sarcoma is very, very unsatisfactory. I am doubtful if many present know of a patient who is alive a year or two years after amputation has been done for such a tumor. The cases on record of true osteogenetic sarcomata that have been cured by amputation are very few and far between. So the point that Dr. Macrae has made that it is of value to try out the intensive x-ray treatment in these cases where there is a likelihood of the condition being sarcoma of bone is well taken, because if it is a sarcoma of bone, in the majority of cases the chances are that nothing can be done for that patient, and we have some very striking results from the use of massive doses of x-ray in the treatment of these very malignant tumors of bone. Another point is this: That diagnosis by means of the x-ray cannot be made absolutely in all cases. I take issue with any x-ray man who will say that he can always make a positive diagnosis of osteogenic sarcoma. Furthermore, bear in mind that mistakes will be made in the histological examination of bone tumor tissue by even the most experienced pathologist. So, take it all in all, it may be very difficult to make a differential diagnosis even under the best conditions.

TREATMENT OF PLACENTA PRÆVIA*

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Perhaps no situation in the realm of medicine so arouses a sense of solicitude in the attendant as a painless, causeless uterine hemorrhage in the last three months of pregnancy. He is suddenly called upon to solve an indeed complex problem, and upon his decision in the beginning, as to the course of action to pursue, rests, to a large extent, the fate of two human beings. He must consider the patient's age, the number of living children, the period of gestation, whether or not she is in labor, whether or not she has been examined before by another attendant, the amount of cervical dilatation, the condition of the child, her environment and the degree of prævia.

We will not enter into a detailed description of the various forms of treatment, but simply touch the high spots of the different trails that the masters have blazed for us and endeavor to point out some of the rather definite reasons for taking the various roads that may lead us safely through this soul trying ordeal.

It has become axiomatic that every woman with placenta prævia should be sent to a well equipped hospital where she can be surrounded with every facility desirable for any formidable surgical procedure. I cannot refrain from emphasizing that precept. We cannot otherwise give the patient the service she is entitled to.

As a general working rule every case of placenta prævia should be terminated as soon as the diagnosis is made. One may be justified in waiting a few weeks if the bleeding has been slight and the child is near the border of viability, but, such waiting is not to be countenanced unless the patient will remain constantly in bed in a well equipped hospital.

In case the patient will not consent to go to a hospital, DeLee¹ helps us out with the following injunction in one of his excellent axioms, "should the patient refuse to go to the hospital and also to allow the accoucheur to induce labor at her home, the attendant had better drop the case and let the patient employ a physician in whom the gambling instinct is better developed. A 'flooding' may occur during the night and the woman lose a fatal amount of blood before aid can reach her. Dr. W. W. Jaggard said, 'there is no expectant plan of treatment for placenta prævia.'" The attendant must watchfully guard every step of the way against loss of blood, for it is impossible to know how much bleeding will take place in the succeeding stages of labor. If bleeding has been profuse in the first and second stages a normal flow in the third may be sufficient to cause death.

When the patient is first seen, if the bleeding is profuse or if the patient is to be transported, a firm vaginal tampon and counter pressure by a tight abdominal binder must be applied at once, but, the tampon must be considered a temporary expedient only, until other 'obstetrical methods can be used.

In the main, there are three courses of action to choose from that are well recognized treatment according to their special indications; Braxton-Hicks' bipolar version, the bags and Cesarean section.

If the woman is in labor, has lost much blood, if the child is dead or very premature or the attendant is inexperienced with placenta prævia, Braxton-Hicks' bipolar version should be done.

*Read before the Austin Flint-Cedar Valley Medical Society, New Hampton, Iowa, July 11, 1922.

After a foot is brought down, extraction should not be accomplished forcibly, only sufficient traction is to be used when necessary to stop bleeding. Now that bleeding is checked, consequently no good reason for haste, measures should be instituted to combat the anemia by the administration of saline solution hypodermically or intravenously or transfusion to replace some of the lost blood.

Rapid dilatation by any means is a dangerous procedure as the highly vascular cervix is very prone to tears. Brodhead² says, "manual dilatation in placenta prævia is a plan of treatment very likely to result in lacerations of the cervix and as a rule should be condemned as dangerous."

In the event that the cervix is fully dilated when first seen, the hemorrhage slight and the placenta is marginal it is good practice to rupture the membrane, thus allowing the placenta to follow the retracting uterine wall which usually arrests further separation of the placenta and allows the head to descend into the lower uterine segment and produce pressure against the placenta and thereby, aid in arresting the hemorrhage. With the cervix fully dilated and the head down in the pelvic canal, forceps extraction may be permissible.

The bag is gaining a deserved popularity. W. B. Thompson³ reports thirty-six cases of placenta prævia treated in the Johns Hopkins Hospital, by means of the bag, without a maternal mortality. It has been adopted as the routine plan of treatment in that institution except when the cervix is fully dilated upon admission. It may be used to induce labor or at any stage of dilatation before the os is open sufficient to permit delivery. Its use is attended, as a rule, with a lower infant mortality than the Braxton-Hicks' manouver.

The bag should be used with care and gentleness, not more than two pounds traction on the tube. The amount of traction may be measured ingeniously by the use of a baby scale hooked onto the bag or by means of a two pound weight attached by a string and suspended over the foot of the bed. As a rule the membrane should be ruptured before the bag is applied. It may, however, be introduced in any case where the amount of dilatation is slight. Usually the largest sized bag is allowed to remain in place until it is expelled; if the patient is then in good condition and the bleeding ceased, spontaneous delivery should be waited for; if bleeding continues, delivery should be affected by version and slow extraction or the forceps.

Types of bags—Probably the original reinforced de Ribe's bag or the Vorhees' modification, which is an American made product, are the

most satisfactory because the flat top does not displace the child's head to the extent that those of a round or pear shape do.

Cesarean section as a routine measure is not justifiable, but, there are certain clearly defined indications for its use. For instance, in a primipara at or near term with central placenta prævia, with but slight or no dilatation of the cervix and the infant and mother in good condition, in which a sharp hemorrhage has occurred so the diagnosis may be made, section is the treatment of choice, providing the operation can be performed in a well appointed hospital and by a man who is a competent abdominal surgeon, and, furthermore providing the patient has not been indifferently handled before admission to the hospital, thereby increasing the risk of sepsis.

Generally speaking, pituitrin should not be used before the third stage of labor. It is considered of value injected directly into the uterine muscle during section to stop the flow if the uterus is slow in contracting.

To control postpartum hemorrhage the uterus and vagina should be completely and firmly tamponed. While waiting for tampon preparation the bleeding may be controlled by bimanual compression of the uterus in anteflexion, compression of abdominal aorta or the application of the Momburg belt. A careful search for, and immediate repair of cervical tears must be made, for the uteroplacental sinuses are so superficial that a slight tear may lead to a persistent hemorrhage.

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ACUTE SUPPURATIVE OTITIS MEDIA IN INFANTS

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This is a discussion of the anatomy, etiological factors, symptomatology, physical signs, diagnosis and treatment, with a plea for more attention being given to the ears and upper respiratory tract in infants.

The conception of a disease process is based upon anatomy, histology, physiology and pathology. Therefore, for a comprehensive conception of acute suppurative otitis media, a knowledge of the anatomy of the infantile temporal bone is paramount.

Anatomy: At term there is no bony external auditory canal, simply a membrano-cartilaginous

one, and not until early in the second year is there evidence of a bony canal. In direction from within, it looks upwards and outwards. The floor of this canal is in contact with the roof. The incomplete tympanic ring, across which is stretched the drum membrane, is very obliquely placed at birth, so much so, that it and the roof of the external auditory canal are nearly in the same oblique plane. In relation to the tympanic cavity the membrane seems to form the inferior rather than the external wall.

The eustachian tube of an infant at term is 14 to 15 m.m. long, less than half that of the adult, but in diameter it is quite as large. In direction it is nearly horizontal instead of projecting downwards and inwards as in the adult. The expanded pharyngeal orifice is on the same level as the hard palate, while in the adult it is at least 10 m.m. higher. The expanded tympanic orifice is on a level with the epitympanic space or attic, having been pushed to this position by the internal carotid artery. The floor of the tympanum is therefore at a lower level than either orifice of the eustachian tube.

The tympanum of an infant is as large as that of an adult and its floor is below the lower limit of the drum membrane. The antrum too, is as large as in the adult, the floor being on a level with the upper edge of the drum membrane. In shape the antrum resembles a flask, the neck of which opens into the attic. However, this neck is broader in the infant than adult.

Under the age of two years the spine of Henle is not developed, but its future site is characterized by a depressed spongy area perforated with numerous lamina for the transmission of vessels. The antrum lies directly beneath this area, always postro-superior to the tympanum, and is very superficial due to the lack of a bony external auditory canal.

At birth some cancellous bone surrounding the antrum is present opening into it like so many holes in a sieve. The development of the so-called mastoid cells varies considerably during the first year. It is well to remember that the facial nerve is on the lateral surface if the mastoid process is not developed.

The cavities of the middle ear are lined by a membrane continuous with the mucous membrane of the pharynx, which in the region of the attic forms various pouches. There is no true submucosa between the mucosa and periosteum but each are possessed of a very rich vascular supply.

The arterial supply of the middle ear is via the ascending pharyngeal, stylo-mastoid, tympanic,

post-auricular, and middle meningeal. The veins pass to those about the periphery of the drum membrane, thence to the eustachian plexus, to the carotid plexus, temporo-maxillary vein, to those of the dura through the petro-squamosal suture, and to the inferior, superior petrosals, and lateral sinuses. The floor of the tympanum is often perforated with vessels. According to Politzer¹ the circulation of the bony labyrinth and tympanum are connected. The lymphatics are especially numerous under the tegmen.

The infant temporal bone reveals at about the mid-point of the petrous portion, at the junction of the vertical and horizontal plates, a large depression, the fossa arcuatus, which transmits a process of dura and a vein and so forms a direct communication between antra-tympanic cavity and dura mater. Through and about the petro-squamosal suture of the infant bone numerous veins and lymphatics pierce the tegmen antra and tympani to empty into those of the dura forming the most common avenue of invasion to the pericranial space.

The subdural space is connected with the perilymphatic space of the labyrinth through the sheathes of the auditory intercranial nerve filaments as they leave the vestibule. The aquaeductus cochlearis connects the subarachnoid space with the peri-lymphatic spaces of the vestibule and cochlea. In early life the aquaeductus vestibularis may connect intra-cranial and peri-lymphatic spaces.²

The temporal bone harbors a highly specialized sense organ, the organ of hearing, position in space, and orientation. It is traversed by, hollowed out by, grooved for, or in close association with, the cerebrum, cerebellum, fifth, seventh, eighth, ninth, tenth, and eleventh cranial nerves, lateral, sigmoid, petrosal sinuses, jugular bulb, and internal carotid artery. Like other bones it is permeated by a plexus of vessels and wherever a vessel, nerve, or process pierces, it allows the passage of infection as the path of least resistance.

Predisposing and etiological factors: From a purely anatomical viewpoint the infant middle ear is readily accessible to infection due to the size, length and relation of the eustachian tube to the rhino-pharynx and tympanum. Before closure of the petro-squamosal and masto-squamosal sutures there is a greater danger of intra-cranial complications as the pathways for infection are more numerous than in the child or adult. How-

1. Balance Surgery of the Temporal Bone—Second Edition, page 24.

2. Balance Surgery of the Temporal Bone—Second Edition, page 73.

ever, the vessels in the tegmen are prone to persist throughout childhood or even into adult life if the individual experiences an acute suppurative otitis media during infancy.

Lowered resistance predisposes to bacterial invasion. In infants the initial point of attack is most often in the upper respiratory tract. That a naso-pharyngitis precedes nearly every acute middle ear infection is universally accepted. Such an inflammation of the rhino-pharynx is primary to, secondary to, or associated with all infections of the upper respiratory tract. Text-books refer to such as prodromal symptoms in measles and scarlet fever. All text-books list acute otitis media as one of the complications of the acute infectious diseases of childhood. However, the frequency of intranasal suppuration which is so often primary to the naso-pharyngitis has not been given the consideration it deserves. In a series of fifty-six consecutive cases of acute suppurative otitis media in infants less than one year old evidence of suppurative intranasal infection was found in 98 per cent of the cases. Therefore, bacterial invasion of the middle ear is most often directly due to acute, subacute, or chronic infections of the upper respiratory tract and indirectly due to lowered resistance.

Lowered constitutional states are often found in institutionalized and artificially fed babies, and are more prevalent in the poorly nourished and ill housed infants of tenement districts, and so is acute otitis media. Deficiencies in diet decrease the anti-bactericidal properties of the blood. The institutionalized infant comes in contact with more persons, that is, is exposed to infections more frequently, and is usually surrounded by more virulent organisms. When artificially fed there is not only a greater tendency toward lowered resistance but also a greater liability of the nasal cavities becoming infected from the oro-pharynx by gravitation or transplantation of the bacterial flora of the oro-pharynx into the nasal cavities during gagging or nasal regurgitation. Certain bacteria, such as the streptococcus are normal inhabitants of the oro-pharynx but their existence in the nasal cavities is pathological. The artificially fed baby is too frequently seen nursing lying practically on its back. If the hole in the nipple too large, the flow too profuse, gagging, coughing, and regurgitation are induced.

In this climate a common cold in the head is the most frequent result of lowered resistance in infants and children. There occurs an inflammatory reaction of the nasal mucosa characterized by a swelling and an exudate resulting in nasal obstruction. The maxillary and ethmoidal

sinuses present at birth are more frequently sites of suppuration than is commonly believed. The infection extends involving the pharyngeal tonsil which in turn undergoes an inflammatory hypertrophy forming a shelf permitting a retention of its secretions and those from the nasal cavities. From over the lateral boundaries of the adenoid there is a constant flow of infectious material bathing the pharyngeal eustachian orifices. This material may be aspirated into them or the inflammatory process extend up the eustachian tubes by actual continuity of surface, setting up a eustachitis which may terminate in an acute serous or suppurative otitis media. Once the adenoids have undergone an inflammatory hypertrophy there results most often a lymphoid hyperplasia so that even in the interim between acute exacerbations they obstruct aeration, drainage, and often mechanically impinge upon the eustachian orifices so that they are a constant source of danger.

Undoubtedly an acute otitis can date from labor. Bar³ found streptococci in the ears of an infant that died during the second stage of labor. In as much as its mother was infected he believes that the ears as well as the eyes can be infected during delivery. Leroux⁴ too, believes that a latent otitis exists in every new-born infant. It is routine with obstetricians to swab out the oral cavity and a few "strip" the nose before the first inspiration. Those that perform the latter maintain that it is not uncommon to "strip out" one or two teaspoonfuls of mucus. If this mucus be infected and aspirated it will be disseminated throughout the nasal chambers, seed sown for an infection of the nasal mucosa and its accessory recesses.

The organisms most frequently responsible for acute suppurative otitis media vary in the various general localities of the country at large. They also vary somewhat from year to year. During some years their virulence is greater than during others. Acute otitis media is practically always mono-bacterial in origin. The following organisms represent the most common primary invaders occurring in frequency in the order named; hemolytic streptococcus, staphylococcus albus and aureus, and the pneumococcus. In this locality the hemolytic streptococcus is responsible for suppuration in the aural cavities in 95 per cent of the cases.

The frequency of acute middle ear infections in infants is not universally appreciated. If the

3. Bar—Otitis in Infants Abs.—J. A. M. A., vol. lxxviii, p. 1763, June 3, 1922.

4. Leroux—Otitis in Infants—Abs. J. A. M. A., vol. lxxviii, p. 392, February 4, 1922.

ears of all of them were routinely examined during the fall, winter and spring months, one would find evidence of tubo-tympanic congestion, showing a latent otitis in a great percentage of them. Since Renaud⁵ introduced the minute examination of ears in his service the incidence of infection jumped from 7.7 per cent to 75 per cent.

Diagnosis: There are two distinct clinical phases of suppurative otitis media in infants, the acute, and the slow subacute types, each presenting an entirely different clinical picture. In either type there is only one reliable method of diagnosis, that is, a direct inspection of the drum membrane.

In the acute type there is usually a history of an acute infection of the upper respiratory tract, most often a cold in the head; if not, evidence of same will often be found on intranasal examination or on irrigating the nose. The onset is usually, but not always, ushered in with a rise in temperature. The mildest type may be announced by a temperature of 102 to 105 while on the other hand the most severe infection may not be accompanied by any rise in temperature. These variations depend upon differences in stability of nervous control, a reflex phenomena of the heat centers. Fumbling at the ears has been referred to as indicative of aural involvement but it probably only represents restlessness. There may or may not be pain in the affected ear and its interpretation is difficult. Alternating paleness and flushing of the face is suggestive of pain. As a rule it must be painful because it exhausts them and there are few circumscribed lesions in the adult which will exhaust one more quickly than acute suppurative otitis media before incision or rupture of the drum membrane. On the other hand some very virulent infections are painless due to the destruction of the sensory nerves. Tuberculous ears are usually painless, and an ear with a dry perforation may painlessly suppurate. Gastrointestinal manifestations of toxemia are not uncommon. Cyclic vomiting may be the manifestation of a mild otitis, or the symptoms of an inorganic acidosis predominate if the infection is more severe. Tenderness on pressure over the tragus is of no value because in the absence of a bony canal pressure is being made against a normally sensitive drum. Signs of meningeal irritation are more common with ear infections than pulmonary infections.

The slow subacute type is the one most often overlooked because the clinical picture is one of a gastrointestinal disorder, characterized by

arthropsia or malnutrition which is analogous to the cachexia of extensive suppuration. Leroux found fifty cases of otitis media among infants with an entrance complaint of gastrointestinal trouble. These infants do not usually have fever, and their temperature is more often subnormal than normal. There is practically always an associated subacute suppurative intranasal infection. Whether the gastrointestinal disorder represents a manifestation of a general toxemia resulting from absorption from the affected ear, or is secondary to the swallowing of the infected material from the nasopharynx is difficult to say but at present am inclined toward the latter because in five cases coming to autopsy, two having had a bilateral mastoidectomy, three unoperated bilateral suppurative mastoiditis, and all having suppurative ethmoid and maxillary sinusitis, the mucous membrane of the stomach was macroscopically diffusely thickened and hyperemic as from irritation by a local irritant.

Since the symptomatology is so varied and often misleading a direct examination of the drum membrane is the only definite method of arriving at a diagnosis. This is not always an easy procedure. Often the small membranous canal contains a residue which must carefully be removed with cotton on a probe. It is not to be removed by syringing as the contact of the irrigating solution against the drum membrane will soon convert a normal drum membrane into a pink or red one rendering its interpretation difficult. Upon removal of the residue the canal often appears as a horizontal slit, a pseudo-atresia, the superior and inferior canal walls having remained in apposition since birth. A reddened canal wall under such a condition may be mistaken for a sagging of the postro-superior wall. However, this pseudo-atresia is readily overcome by pulling the lobe of the ear downward and forward which should reveal the drum membrane very obliquely placed.

The membrana tympani in the presence of acute otitis media before rupture may present one of several clinical pictures. The red bulging drum membrane with the fundus landmarks obliterated is the classical one, and is due to retained serum, swollen mucous membrane or pus under tension. If hot oil has been dropped into the ear a myringitis has been produced which will mask the picture, and should therefore always be strictly forbidden. A red drum without bulging is suggestive of disease with an open eustachian tube. It is most commonly observed in acute serous otitis media before there is a increase in intratympanic tension. A white lusterless drum

5. Renaud—Otitis in Infants—Abs. J. A. M. A., vol. lxxviii, p. 1763, June 3, 1922.

is just as significant of disease as the classical red bulging one. The whiteness is due to a necrosis of the superficial epithelium beneath which the drum is red. Both ears must always be examined because acute otitis media is bilateral in 90 per cent of the cases, in infants.

In case of doubt whether there exists an acute suppurative otitis media an exploratory myringotomy is warranted. It never does harm if properly executed under aseptic conditions, and the lack of it may prove fatal. To wait before doing a paracentesis withholds part of the information concerning the process; condemns the patient to unnecessary suffering, exposes him to the possibilities of a clinical mastoiditis and its complications, and results in an irregular opening should spontaneous rupture occur, which subsequently leaves the membrane less fit to functionate.

In preparation for myringotomy it is necessary to have definitely recognized the drum membrane and its junction with the posterior wall. The extreme obliquity of the drum renders this somewhat difficult if both drum and wall are reddened. The instruments and field being sterile the incision is carried from below upward through the postro-inferior quadrant under direct inspection remembering that the infant tympanum is shallow and the membrane very obliquely placed. An anesthetic is not necessary.

On paracentesis if neither serum nor pus are encountered there is little danger of secondary infection providing the knife has not touched the wall before entering the drum and the procedure is not followed by irrigation. If a sero-sanguinous exudate is encountered it is suggestive of a streptococcus infection but its character will probably change to a macroscopically purulent one within twelve to forty-eight hours. In amount the discharge should reach its maximum within twenty-four to thirty-six hours unless an osteomyelitis exists. It is imperative to take a culture of the exudate at time of paracentesis, before it becomes secondarily infected, in order to gain a conception of the pathological process hidden from view. The acute infective process rarely remains limited to the tympanum but extends by actual continuity of surface or an overflowing into the antrum and its appendages. Thus every case of suppurative otitis media is pathologically one of suppurative antritis or mastoiditis, but not necessarily clinically such.

The classical signs of clinical mastoiditis requiring surgical intervention are less distinct in infants than in older children. During the course of acute suppurative otitis media the presence of

any of the following symptoms or signs warrant drainage of the antrum and its appendages.

1. Signs of meningeal irritation or nerve palsies before or after myringotomy. Although admitting that infants are more prone to develop mild forms of meningeal irritation than older children, to vasilate may permit a serous lesion to become a suppurative one, or a localized lesion to become a diffuse one.

2. Following paracentesis, if the temperature does not progressively approach the normal and cannot otherwise be explained.

3. General condition not improving following paracentesis, that is, continues to lose weight, takes feedings poorly, bad stools, sweats, or appears septic. Cases with a coexisting acute infectious disease, pulmonary infection, pyelitis, or suppurative intranasal infection have their combative powers increased when relieved of the absorption from a suppurative middle ear infection.

4. Stationary or increasing leukocytosis with a polynucleosis on successive days which cannot otherwise be explained. Discretion should always be exercised when considering laboratory data, because an extensive osteitis may exist with a normal white cell count.

5. Retro-auricular edema or antral tenderness.

6. Amount of aural discharge too profuse to be accounted for other than by an osteomyelitis.

7. Amount of discharge stationary, that is, not progressively decreasing at the end of three or four weeks. Certainly not more than four weeks for under no circumstance should a chronic suppurative mastoiditis be allowed to develop.

In the infant the x-ray is of little or no value in the determination of an osteonecrosis.

There are other signs and symptoms which may or may not indicate operation depending upon the surgical judgment of the attending physician. A hemolytic streptococcus obtained at time of paracentesis denotes that there exists a treacherous infection whose limits we cannot detect. In these cases the macroscopic pathology revealed on operation is often more extensive than indicated by the superficial signs, thus to institute drainage is the safer procedure. Bulging of the postro-superior wall may be due to a localized periostitis which may subside. On the other hand it may indicate an empyema of the antrum or a perforation of the cortex. Signs calling for secondary paracentesis, providing the initial one has been properly performed, is indi-

cative of pocketed infection, blockage of the antrum or its appendages, or reinfection.

The object in doing a mastoidectomy is two-fold, primarily to preserve life, secondarily to preserve the function of the organ of hearing. Complications such as profound toxemia, suppurative meningitis, chronic suppurative otitis media, sinus phlebitis or thrombosis, septicemia, labyrinthitis and brain abscess are very serious. Therefore surgical intervention before complications develop clinically offers the most favorable prognosis and should be the procedure of choice. One will more often regret having postponed operation than having instituted drainage. Deafness of an inner ear type, complicating middle ear deafness, occurs early in suppurative lesions of the middle ear so that prevention of a permanent impairment of hearing is an objective which should be given more consideration.

Prophylaxis: The frequency of occurrence of acute suppurative otitis media and its complications can be reduced providing more attention is given to intranasal and naso-pharyngeal infections.

1. First would suggest that it be routine to strip the nose before the first inspiration at time of delivery. To be followed by the instillation of fresh 1 per cent argyrol in each nostril.

2. That more careful supervision be given to the management of the diet and nursing of infants.

3. That evidence of suppurative intranasal infection be inquired about in the history and sought for in examination of infants. Once the diagnosis is established more attention be given to its treatment.

4. The removal of hypertrophied or infected tonsils and adenoids, regardless of the age, if intranasal suppuration exists, on evidence of tubotympanic congestion, if they are causing respiratory obstruction, or during the course of acute otitis media the discharge has persisted for two weeks.

5. Routine examination of ears during the course of all acute infectious diseases.

6. That more attention be given to the ears and upper respiratory tract in infants with an entrance complaint of gastrointestinal disturbance.

Treatment: Treatment of an existing otitis is based on early diagnosis by direct inspection of the drum membrane. Myringotomy to be followed by irrigations using a saturated, sterile warm boric acid solution, used frequently enough to keep the canal clean. During the irrigations the infant should be placed in the upright position and the lobe of the ear pulled down and forwards

so that the discharge in the acute antro-inferior angle, formed by the junction of the anterior canal wall and drum membrane, will be removed. Management of the diet and local treatment for the coexisting infection are very important factors which often determine the course of the ear infection. It is not always practical, but when possible the infant should be under the observation of a conservative yet not timid otologist capable of mentally visualizing the pathological changes hidden beneath the cortex. If properly treated the prognosis is favorable and the infant is going to survive with normal hearing, so that our two-fold object is accomplished.

The object of this paper is to emphasize that acute otitis media is of more frequent occurrence in infants than is universally recognized.

That the primary etiological factors are lowered constitutional states with suppurative intranasal infection.

That the cause must receive adequate treatment in order that the conservative treatment of the aural condition be effective.

That symptoms and signs of acute otitis are variable. That a slow subacute type exists in which the predominating symptoms are gastrointestinal.

Diagnosis depends entirely upon direct examination of the drum membrane. In case of doubt a myringotomy is warranted.

In infants considerable osteitis may exist without superficial signs due to the large antrum with a wide aditus.

That the object of a mastoidectomy is not only to preserve life but to preserve the function of the organ of hearing.

That a healed mastoid scar is much preferable to a chronic discharging ear, defective hearing or your own personal anxiety concerning the course of the case.

SUICIDES IN 1922

Seventy-nine millionaires were among the 12,000 persons who committed suicide in 1922, it was reported by Dr. Harry M. Warren, president of the Save-A-Life League. One-third of those who killed themselves were women, the oldest a great-great-grandmother, one hundred years old, and the youngest a child of five. Among others in New York there were thirty-eight college students, fifty college professors and school teachers, nineteen preachers and leaders of religious work, fifty-two judges and lawyers, eighty-four physicians, one hundred presidents and heads of large business concerns, and a number of bank presidents, one of whom tried ten times to die before succeeding.

TREATMENT AND RESULTS IN FRACTURES*

JOHN M. DODD, M.D., F.A.C.S., Ashland, Wis.

The value of any surgical procedure is to be determined by the degree of success attained in the relief of the condition for which it is undertaken.

The procedure to be adopted by the surgeon is left to his judgment, and the selection of the method through this judgment is to be arrived at by his own experience and a rational use of the experience of others, available through clinics and published reports.

So much is being written these days about fractures that one hesitates to propose it in a medical program without an apology, but until the profession arrives at a method of treatment giving uniformly good results in all cases, the treatment of fractures will be an open question. I therefore venture to bring this subject again to your attention, knowing that those whom I address are practitioners like myself, searching for the truth in the fracture question, and having tried many methods of treatment, are not satisfied with their results in many cases.

It is not my purpose to bring out any new method nor any arbitrary changes in the methods now in use, but possibly to present some thoughts which will be helpful in making the form of treatment we now use more satisfactory.

There is uppermost in the mind of every one who attempts to treat a fracture, and it has probably come to all of us many times when we have attempted to treat fractures by the closed method, this question:

"Have I secured an approximation of the fragments so that I can expect union within a reasonable healing period with a good functional result, and what shall I say to this patient when he is shown an x-ray picture of his broken bone with its fragments out of place?"

We all know how disappointing the x-ray plate is when it pictures the broken bone in a part which bears every resemblance to normal in length, alignment, and outward appearance, and that the reward for using our best efforts is to see every fracture, which has been displaced, more or less out of place in spite of any amount of external manipulation we may have made.

It is seldom, if ever, that a displaced fracture is completely reduced unless we cut down upon it and remove the interposed tissues and clot.

Fortunately experience has taught us that it

is not necessary to have correct replacement of fragments, and that good anatomical and functional results will follow the closed, moderately displaced, fracture as quickly as the one that is opened, accurately replaced, and fastened in place with some foreign body, and that nature in time smoothes over the points and angles about such fractures. If alignment be good there will eventually be little signs of the fracture left.

We see in the skiagraph many cases of old fractures functioning normally though there is considerable deformity of the bone not evident from without. We also see many old fractures where callus, angles, points, and deformities can be seen and felt without the aid of the x-ray and yet function is proceeding normally.

We have too, seen many of our fractures we have accurately replaced by the open method remain ununited for a period much longer than it takes the simple fracture to unite if left closed though not quite in place.

Skiagraphs of our operated fractures showing the open space between the fragments, persisting long after they should have ossified, annoy us often.

It is reassuring to know that, in some of these, there is a callus splint that does not show in the picture, which enables the part to function until after varying periods the ossification is complete.

We are told that too many fractures are operated upon, but no one has yet told us what is the maximum amount of displacement we may have without resorting to the open method, and until this question can be answered quite positively, we must expect to be criticized by those who, whether or not competent to judge, will, nevertheless, pass adverse judgment on our work.

It is much more comforting to know a fracture is completely reduced even if we have to open up to make the reduction, and now that facilities for operating fractures are so good, and the dangers at a minimum, there is a strong temptation to operate on them all.

For myself, should I sustain a fracture, and having available the services of a good surgeon in a modern hospital, I should choose the open method rather than have the fragments very much out of place. I should want the readjustment to be three-fourths perfect as a minimum.

This conclusion is arrived at after an experience of a third of a century in the treatment of fractures in a section of the country where fractures have been common, and where most all the methods of treatment have been tried out.

I am aware that a great majority of those

*Read before annual assembly of the Tri-State District Medical Association at Peoria, Illinois, October 30 and 31, November 1 and 2.

speaking or writing on the treatment of fractures advise against operative treatment, and especially against the use of plates and other non-absorbable material, but I maintain that there are many cases which require the Lane plate, or the Parham and Martin band or some other strong support should be applied to the fragments.

I am willing to admit that the indiscriminate use of these various aids to reduction and maintenance of position should not be made except where the most rigid asepsis is obtainable and by surgeons of experience in the mechanics of fracture surgery.

Attempts to popularize any new procedure always calls forth enthusiastic and often misdirected effort to make use of it, with failure to obtain the results of its originator, and disappointment is followed by discredit for the procedure.

Few men can follow successfully the leadership of others.

Few surgeons are equally successful with its originator, in the use of any new method.

Many promising surgical procedures, successful in the hands of their inventors, fail when tried out by strange hands.

No two men will get exactly similar results with the same method whether they be physicians or surgeons, just as one who has made success in practice in one community will not be equally successful in a new location until he adapts himself, for communities differ as well as men.

This human element must be taken into account when passing judgment on the value of any form of treatment.

While we aim at anatomic perfection in the treatment of fractures, abundant evidence is before us, that good functional results may be expected even if there be considerable separation of the fragments. Those of us who may have been compelled to complete the dressing of a fracture which did not look first rate in the skiagraph, may take encouragement from the many cases which come before our observation where the results are entirely satisfactory, if we can only have the cooperation of the patient, which is not always easy and is often the greatest difficulty in restoring the function of a part.

We know that comminuted fractures make the poorest showing under the x-ray and that correct replacement of these fragments is well nigh impossible due to several factors, the principal one being the attachment of muscles pulling in many directions so that if the fragments are brought into position they cannot be held there without some artificial means directly applied.

Callus and bone formation seem especially active in these cases, and if not operated they do surprisingly well if held with the ordinary external splints.

We find an increasing readiness on the part of surgeons to display their comminuted fractures with fragments badly out of position, and call a reduction satisfactory, which, to a layman, would seem a very poor job. Results previously obtained in such cases give assurance to the surgeon which he did not possess in the early days of the x-ray.

The beautiful exhibits of x-ray pictures of fractures, plated or treated by other means which we formerly saw on the screen, did not tell all the story. The poor jobs were not shown. We show them all now without hesitation for we have learned that those cases that look bad are not really so, and nature, if properly guided and assisted, will do wonders in restoring a broken bone, which, under the x-ray, looks almost hopeless.

Of the cases which will be presently shown on the screen, I desire to call especial attention to two, illustrating a method of bridging a gap where there has been loss of bone—one case in which the entire elbow joint had been carried away by a charge from a shot gun. A long Lane plate, bent to an angle and fastened to the humerus and ulna, was a most satisfactory means of holding the arm until healing had taken place, making it possible to handle and dress the arm, which could not have been done in any other way. Ligamentous union followed, giving a joint that is almost as useful as a normal joint.

The other case is a little boy who had a charge of small shot pass through his upper arm at short range, carrying away about two inches of the humerus, but leaving some fragments of the bone in the wound still attached to periosteum. A Lane plate bridges this gap, enabling the arm to be handled with ease and comfort to the patient while the fragments form nuclei for the rebuilding of the bone. This is a recent case and now under treatment and I expect a regeneration of bone that will give a useful arm, and if necessary, a bone inlay can be inserted at the proper time if it seems necessary.

This, to my mind, is the most successful use to which we have put the Lane plate, indispensable as it seems to be at times in holding broken bones in position.

The other fractures shown are chiefly of the long bones, representing the different types of simple, compound, and comminuted fractures in varying degrees of reduction with the means of retention from the external splint to the bone in-

lay, including the Lane plate and the Parham and Martin steel band. Experience proves that all these methods have their place and serve a purpose of distinct value.

The results in many of these cases prove what has been said in the foregoing paper, for they are old enough to enable one to judge of the value of the treatment. In all these cases good functional result has followed though the period of disability has been unusually long in some of them, due to delayed union, caused by a mild infection in the open fractures and other causes.

It will be observed in some fractures of the thigh that the plate has held the fragments apart after the preliminary softening process has taken place, so that when even slight weight has been put on the leg the plate has either bent, broken, or the screws pulled out. For this reason, the plate in a thigh bone should be removed in about four weeks. The fractured ends will be drawn together by the muscles, and being held in alignment by a splint union is much better favored.

In one case a plated fracture of the humerus shows the plate in situ four years after being put on. It is buried in callus.

In another the plate is still on a femur after eight years. It is the second plate on this fracture. The first one was bent and torn loose as before mentioned. It has not made any trouble, and at the patient's request has been permitted to remain.

The bone band shown on several of the fractures, especially oblique and spiral fractures, are always removed in about four weeks. Otherwise by their annular pressure they are apt to interfere with the nutrition of the bone and set up a mild periostitis.

End results prove to us that the fragments of a comminuted fracture, though badly placed and impossible to replace without opening the fracture, had better be left alone after we have made as good a reduction as possible.

THE CHRONIC ABDOMEN

The Journal of the American Medical Association enters an editorial protest against the use of the term "acute abdomen" and joins with Dr. Robert Hutchinson in writing on the "chronic abdomen" and contends that if the "acute abdomen" is a catastrophe, the "chronic abdomen" is a conundrum. The patient suffering with this disease is usually a woman, generally a spinster; if married, childless, and belonging to what is commonly termed the "comfortable class."

SOME CONTRAINDICATIONS TO HERNIOTOMY*

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The indications for and against operation in inguinal hernia are usually clear and leave no room for doubt. For this reason, perhaps, in the minority of cases where the matter is at all debatable, we are apt to give the matter too little thought. Moschowitz has said that, "in all cases of hernia where operation is not contraindicated, it is indicated. The only excuse for this paper is the prevailing confusion as to just what these contraindications are. The fact that there is no good standard and that our choice of cases for surgery is not always good is amply borne out by a study of the mortality of the operation and the recurrences after operation.

In simple unstrangulated hernias, it is rather discouraging to find that our mortality is about one-half of one per cent. This is true in the best American hospitals and in the best clinics. Certainly this fact should make us less eager to advise operation lightly.

Now, as to the recurrence rate. The average that has been reported is 0.6 per cent of recurrences. In direct hernias about 20 per cent recur after operation.

Of the deaths over half are due to respiratory complications, and most of the remainder to infection. Technical errors are no longer a frequent cause of death. Before the time of Bassini the death rate was over 6 per cent. In the period 1890-1900, it was 1.9 per cent; 1900-1910 it had fallen to 0.9 per cent. Instead of dropping to zero, as we have a right to expect, it seems to have become about stationary at a little below 0.5 per cent, although in some clinics, especially where the patients are mostly children, it is much lower, as low as 0.2 per cent.

Most of us do not really know how many of our hernias do recur because they are likely to go to another surgeon, and we only see the failures of our colleagues, and are inclined to believe that our own work does not fail. The failures are of three types. In the first, healing has been good and firm, but as soon as the patient is up and about his hernia recurs and examination shows that it is an oblique hernia. This can mean but one thing, and however unpleasant, we should face it. In all such cases the sac has been double or pantaloon-shaped and we have only removed half of it. Nothing else can explain a recurrence in the oblique form. Most recurrences are of

*Read at the Milwaukee Meeting of the Tri-State District Medical Society, November 14, 1921.

the direct type. The lower stitch holding the conjoined tendon to Poupart's gives away and a small direct hernia appears just above the pubic spine. Usually this is due to infection at the operation, but a few cases occur later, because the conjoined tendon was deficient and had to be put under too great tension to oppose it to the ligament.

In view of the above what shall we say that the contraindications are?

Size and Type—Some excellent surgeons have gone so far as to say that direct hernias are absolutely harmless. They claim that they never become scrotal and that they never are subject to strangulation. This is a little too extreme a view in my estimation, as I have seen a direct scrotal hernia. However, we have to admit that a direct hernia very rarely does cause any trouble, and is not likely to grow in size or to escape through the external ring. The sac is dome-shaped and has a wide neck, which to say the least does not favor strangulation. These facts, together with the recurrence rate of 20 per cent, should warn us that operation is not to be lightly undertaken. Only those cases which actually suffer pain, should be submitted to surgery, and the great majority, treated by trusses.

Many oblique hernias have inguinal canals of the same type. The reason for the failure of operation in these hernias is that there is a deficiency in the lower part of the conjoined tendon. Instead of inserting onto the pubic spine it bridges across and inserts into the rectus sheath an inch or two above. This makes it impossible to sew the conjoined tendon and Poupart's ligament together except under extreme tension, and the lower stitches are sure to pull loose. Usually in this type of canal a direct hernia is found, but many oblique ones are also met.

In other cases the ring may be too large to permit of apposition of its edges. There are many old neglected hernias in which the tissues about the internal ring are so attenuated from pressure and dragging that it is evident that even if carefully sewn together, they would not have the strength to resist the intra-abdominal pressure. In a typical case of this sort one finds both the external and internal rings much enlarged and lying directly over one another. The pillars of the external ring have split and the fibers of the external oblique aponeurosis are spread wide apart into strands and are useless for sewing. The internal ring has enlarged downward, and its lower boundary, the deep epigastric vessels are crowded against the pubic spine. These conditions together with the above mentioned deficiency of the conjoined tendon, tend to make

a successful repair very difficult. If the external ring is large and we can insert the finger and palpate the deep epigastric artery, or can feel the lack of conjoined tendon, it is best not to operate. Without operation the outlook is good as the mouth of the sac is wide and strangulation is not likely. A partially successful closure only increases the danger by making a small neck to the sac. Should these conditions only be discovered at operation, we should use all the means at our command, such as rectus or rectus sheath flaps or even free fascia lata transplants, as recurrence is very likely.

Another condition not seen so much now, is these very large hernias where so much of the viscera are herniated that the abdomen is no longer able to retain them. Gradual reduction together with preoperative starvation, will reduce the embarrassment of the heart action consequent to the forcible reduction of these large hernias.

Obesity is a much neglected contraindication to operation. In fat people the intraabdominal pressure is always very great. In the erect position the weight of the fat-laden viscera and their mesenteries is so great that a recurrence of the hernia is very likely. The muscles are degenerated and good union is difficult to obtain. Also interposition of fat between the suture lines is hard to prevent. Finally the risk of a general anesthetic is much more than ordinarily as the heart is also burdened with fatty accumulations and frequently fatty degeneration of the myocardium is present. This latter condition usually gives no signs but the risk of sudden death is great. The very obese should always be dieted for long periods before operation, and their weight brought down to a reasonable figure.

Age—In infants of course, it is always best to attempt cures by mechanical means as they are usually successful. In old age, however, the problem is often very difficult. We should understand in the first place that old age is purely a relative term. Frequently men of advanced age are encountered whose bodies present no signs of degeneration. Such men are, contrary to the general opinion, very good surgical risks. People over sixty, who are used to heavy labor or who indulge in vigorous outdoor exercise, should be operated upon, especially if the hernia is causing pain or aching in the groin. The mortality is only slightly higher than in the young. The recurrence rate is far higher however, about 10 per cent as against 5 per cent or less in younger subjects.

When consulted by a person over sixty we should proceed as follows. If the patient is obviously infirm or leads a sedentary life operation

should at once be refused. If the hernia is reducible a truss should be advised. If not it should be left alone. Marked loss of weight, stoop, arcus senilis, or extensive muscular atrophy are danger signals. If these signs are absent the patient should be sent to a hospital for complete examination. This should include repeated blood-pressure tests, complete blood and urine examinations, careful search for signs of emphysema, bronchitis and heart lesions, and exercise tests for heart function, and rectal examination of the prostate. Only in the event of all these being negative, should operation be undertaken and then with the full knowledge of the patient that there is about one chance in ten that his hernia will recur.

Alcoholism—Alcoholics make very poor surgical risks. By alcoholics, I mean to include not only the chronic drunkard but also the chronic drinker no matter how moderate. The latter would resent being classed as an alcoholic, but is just as bad a surgical risk. In the first place these patients are very liable to develop delirium tremens after any such trauma as an operation. In some large city hospitals this is the commonest fatal complication of herniotomy. At least a month's abstention from alcohol should be insisted upon and even then care should be used, as the cardiorenal system is often impaired.

Systemic Disease—The presence of any systemic disease of grave prognosis should of course preclude a herniotomy, and strangulation is the only indication. In any chronic sepsis such as osteomyelitis or empyema, hematogenous infection of the wound is very likely to occur. Ascites, from any cause, is a contraindication, as it is sure to recur before the wound is healed firmly enough to withstand the pressure.

Syphilis—A strongly positive Wassermann test should always preclude operation. At times cases with no demonstrable signs of lues are met with, but which nevertheless give a slightly positive test. If treatment has been adequate these may be operated. One should always insist on a spinal fluid examination in all doubtful cases as this is frequently positive where the blood is negative.

Tuberculosis—Only under special circumstances are tuberculous individuals proper subjects for herniotomy. In all advanced cases, those with bad outlook, and those which are febrile and demand rest it is contraindicated. If the hernia is not troublesome it should never be operated. There is a considerable class of cases however, usually classed as arrested, in which the necessity of vigorous outdoor exercise is evident. If a hernia is present, which is painful or

irksome and interferes with this, an operation must be done. Ether is too irritating and should not be used. Gas is less harmful but local anesthetic is the best. This situation is rather common, because the emaciation and weakening of the muscles destroy part of our protection against hernia, and the cough is the exciting factor in forcing a loop of gut or a strand of omentum into a preformed sac. Whatever the reason, hernia is much more common among the tuberculous.

Diabetes—Herniotomy is rarely indicated in a diabetic. In the young the disease is progressive and rapidly fatal. In the old the danger of coma or of sepsis in the sugar-soaked tissues is great. Only the very mildest cases should be operated and those only if the hernia is causing pain. The urine must be sugar free on a fairly liberal diet, and no acidosis present. A fast day or two should precede the operation, and the next day a rather liberal amount of carbohydrate allowed.

Nephritis—Slight albuminuria or the presence of a few casts in the urine should not preclude an operation in an otherwise healthy individual, although in such cases it may be well to use local anesthesia. In severe nephritis it is best not to operate. All cases should be classed as severe which show a marked decrease in the functional capacity of the kidneys. Certain signs will warn of this condition. Edema or arterial hypertension are warning signs. Scanty urine or polyuria with very small amounts of solids, retention of salt, nitrogen, or urea, as determined by blood or urine tests show loss of kidney function. For surgical purposes, however, the phenol sulphphen-phthalein test has proven to be an almost specific test of the ability of the kidney to withstand the shock of an operation. If less than 40 per cent of the dye is excreted in two hours, it is best not to operate. If higher results are obtained, we can rest easy as to the outcome of our surgery.

Respiratory Affections—In the presence of chronic bronchitis, emphysema, or bronchial asthma it is best to avoid operation. We know that over one-half of all deaths following herniotomy are due to pneumonia, and it is very unwise to operate in the presence of an already infected lung. Even local anesthesia is not a sure protection.

Heart Lesions—Well compensated heart lesions are good surgical risks. We should not be frightened by loud murmurs. Operations and general anesthesia are very well borne. Gas should not be used. Myocarditis or failing compensation as evidenced by dyspnea, edema, tachycardia, or congestion of the liver or lungs removes them from the operable class.

Urinary Disturbances—Very commonly herniotomy is followed by retention of urine, necessitating catheterization. In urethritis we would not wish to carry infection into the bladder, and in stricture it might be impossible to pass a catheter. An enlarged prostate may be irritated by the catheter to such a degree as to cause complete obstruction. Therefore, these conditions are all contraindications to operation.

In conclusion, I want to make a plea that when our operations fail that we admit that it is really our fault. In other words we should face the matter squarely and endeavor to find out what was wrong. If we are sure that our technique was correct in a given case that recurs, there is only one alternative, and that is that that case should not have been operated upon—that our choice was wrong. So many times one hears that a case recurred because the patient coughed too hard, or was distended with gas, vomited, sat up too soon or had some such strain. Is this not really dodging the issue? Do we expect a case to break open on the table as he vomits or strains harder than he ever will while conscious? Do we not go calmly ahead and insert the sutures while a patient is having the most violent coughing or choking fit? Is any strain that occurs while our patient is awake comparable to this? If our stitches broke before our eyes before the next row was inserted we would freely admit that something was wrong. Then why not admit the same when a firmly healed wound of two or three weeks shows a recurrence?

HEMORRHAGIC DISEASE OF THE NEW-BORN*

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Though this disease is one of the oldest known to man, it has always been surrounded with much confusion, and our present knowledge of the ultimate cause is still incomplete.

As with many other syndromes in medicine, the nomenclature is complex and confusing. *Melena*, hemorrhagic diathesis, *omphalorrhagia neonatorum*, *hemophilia neonatorum* are but a few of the terms found in the literature. Names applied according to the site of the bleeding have led to a further multiplicity of terms such as: *purpura of the new-born*, when hemorrhages occur in the skin; *melena*, bleeding from the intestinal tract; *omphalorrhagia*, bleeding from the

cord; hepatic, adrenal, and cerebral hemorrhages. Unfortunately with so much emphasis on names characterizing the location of bleeding, the very fact that hemorrhages are usually multiple has been overlooked. Hemorrhage may occur in every organ and structure of the body and in varying combinations.

Warwick¹ reports that more than 50 per cent of the cases of hemorrhage occurring in the New-born Clinic of the University of Minnesota have been multiple. At autopsy, hemorrhages have been found in the brain, lungs, liver, kidney, adrenals, skin, retina, and over serous and mucus surfaces. This is in agreement with Townsend's² observations which showed bleeding from the bowel and cord alone in only twenty-two out of fifty cases.

Lequeux³ in his Paris thesis in 1906 gives a comprehensive review and bibliography of the subject. He illustrates the confusion and lack of knowledge by presenting four stages of historical interest and study.

1. Up to 1825. The period of confusion.
2. 1825-1835. The period of clinical study. Widely varying causes were cited. Too late tying of the cord had its supporters, while too early ligation was quite as warmly advocated.
3. 1835-1875. Pathological anatomical studies revealed a variety of lesions such as embolism, ulceration, patent ductus arteriosus, and other congenital heart defects. These, when found in conjunction with hemorrhages, were naturally pointed out as the etiology of the bleeding.
4. 1875-1906. The period of laboratory study. This being the era of development of bacteriology, it was not strange that the cause of the hemorrhages should be laid to bacterial invasion of the blood stream. Many of the pathogenic bacteria were charged as agents of the disease. Gartner⁴ in 1893 even claimed the discovery of a specific hemorrhage producing bacillus.
5. There can now be added a fifth period from 1908 to the present. Modern studies of the physiology of the blood, especially its properties of coagulation being the newer contribution—the causes of hemorrhages are sought in this field. It has also been suggested that certain changes in the vessel walls are involved in the disease.

Out of the chaos, Schloss and Commiskey⁵ have brought a simple, understandable classification of hemorrhages in the new-born. Hemorrhages during the first days of life may be:

1. Traumatic—from obstetric or surgical procedures.

*Tri-State District Medical Association Assembly, Waterloo, Iowa, October 4, 5, 6, and 7.

2. Accidental—as illustrated by insecure tying of the cord.

3. Spontaneous—without apparent cause. Further spontaneous hemorrhages may be classified as:

(a) Symptomatic—incidental to diseases as sepsis, congenital lues, or in the offspring of families showing true hemophilia.

(b) Idiopathic—which is to say up to the present, without known cause. This paper deals with this latter type under the generic term, Hemorrhagic Disease of the New-Born as first suggested by Townsend.²

Frequency—The frequency of the disease varies within wide limits according to different observers: Winkel,⁶ Gerhardt,⁷ Ribemont⁸ report one case of hemorrhage in each 5000 births, while Orłowsky⁹ found the rate 1 to 116 births. This discrepancy arises from the fact that early observers took note only of the cases presenting signs of external bleeding, and overlooked those with internal hemorrhages only. Later writers from closer pathological studies find death in the new-born due to internal hemorrhages often when entirely unsuspected. From our experience in the New-born Clinic at the University of Minnesota, with blood studies and careful autopsy control, we would say the incidence of hemorrhagic disease is 1 case in each 100 births. At any rate, the frequency is much greater than one would be led to believe from reports found in the literature.

Symptomatology—The symptoms depend largely on the extent and site of the bleeding. The onset is within the first eight or ten days, most frequently on the second or third day. There are usually no striking premonitory symptoms, restlessness and pallor first calling attention to the infant. The temperature is usually normal, though there may be temporary elevation. It becomes subnormal after an extensive hemorrhage. Presently may be noted the discharge of blood externally, emesis of blood and tarry stools (true melena), bleeding from mouth, nose, umbilicus, urinary tract, skin, or a rapidly growing cephal-hematoma. Under these conditions, he who runs may read. However the hemorrhage may be obscure, and external bleeding may occur very late or fail entirely. There may be dyspnea with hemorrhages into the lungs, pericardium or pleural spaces—collapse, resulting from hemorrhages into the liver, adrenals or abdominal cavity—marked disturbances of respiratory and cardiac rhythm, and vasomotor symptoms from the pressure of blood over the base of the brain—convulsions from a blood clot over the cerebral cor-

tex. In fact, no more complex pictures of disease are found in medicine than in this malady.

Etiology—It is a well known clinical fact that certain types of infections, such as streptococcic septicemia, produce tendencies to hemorrhages. The new-born offers no exception to the rule. This agrees with the observation of epidemic hemorrhages in new-born wards accompanying puerperal infections as observed by earlier writers. The same cause was operative in Buhls disease, and Winkels syndrome which, thanks to better obstetrics, have passed out of our experience. Doubtless some cases of bacterial infections still occur and produce hemorrhages. But later studies show that much of the bacteriological theory is untenable. These cases show little or no elevation of temperature, no other signs of septicemia, and once the bleeding is controlled, there is immediate recovery except for slight anemia. Lambert's¹⁰ case of a classical and very severe hemorrhage showed instant recovery as a result of direct transfusion of the father's blood. Lues may operate as a cause in certain cases, as also the very rare gastric and duodenal ulcers. Likewise certain degenerative changes in the liver, as in congenital familial icterus, and phosphorus poisoning, produce hemorrhages. However all these conditions produce actual pathology demonstrable at autopsy, and the hemorrhage may be considered secondary or symptomatic. On the other hand in true hemorrhagic disease no pathological changes have been demonstrated except the uncontrolled tendency to bleed. Observation of unusual congenital lesion, as patent ductus arteriosus, and heart lesions, we now know to be no factors and even compatible with life. Cerebral hemorrhage has been given as a cause, whereas we now know it to be rather a manifestation or symptom of hemorrhagic disease.

According to our present light, it appears that the latest theory as to the cause of hemorrhagic disease is the most tenable, namely changes in the blood or blood-vessels. Further, I believe that the latter factor can be discarded. No gross nor microscopic changes have ever been demonstrated in the vessels. If the ultimate cause of hemorrhage resided in the vessel wall, it is difficult to understand results such as Lambert¹⁰ obtained by transfusion of blood. One would rather anticipate that the blood introduced would continue to escape from the vessels.

Bowditch,¹¹ and Minot¹² and other early observers had noted the thin watery condition of the blood, its failure to coagulate normally and the futility of local measures in checking its flow. Schwarz and Ottenberg,¹³ and Lucas¹⁴ have ob-

served impaired coagulation of the blood in this condition which they believe is due to a deficiency of some coagulation producing substance, or excess of the anticlotting factor. If this is true, injection of normal blood or blood serum should overcome the disease. This has been demonstrated by various measures: Lambert¹⁰ obtained striking results by transfusion, Welch¹⁵ employed human blood serum with gratifying results, Leary¹⁶ obtained help from the use of animal sera. The injection of whole blood subcutaneously by Schloss and Commisky⁵ proved efficacious.

I believe the cause of hemorrhagic disease in the new-born is some physical or chemical change in the blood which produces delay and impairment in its coagulation properties—that the most constant findings in this disease are a delayed coagulation time and a protracted bleeding time. Further, these findings may antedate any symptoms by hours or days even. These changes may be the only signs of hemorrhage, external bleeding failing in many cases. Some conflicting results have been reported, which I believe are due to varying and unwieldy methods employed in performing coagulation tests and a lack of knowledge of the normal new-born coagulation and bleeding times.

Studies¹⁷ of the new-born blood were undertaken in searching for an explanation of the very frequent finding of cerebral hemorrhage following normal deliveries where traumatic factors failed, and where bleeding was often multiple. A number of these cases showed delayed coagulation and delayed bleeding times. The results of the study were published in the *Journal of the American Medical Association*, August 14, 1920.

The method¹⁸ of determining the coagulation time which I employed is described in the *American Journal of Diseases of Children*, April, 1920. It is very simple, capable of employment under the most primitive conditions. Briefly, it consists of collecting a freely flowing drop of blood in a clean watch glass, containing a clean No. 6 lead shot. The end point of coagulation occurs when the shot is caught up in the fibrin and no longer rolls. The bleeding time was obtained by Duke's¹⁹ method. Our results in many hundreds of determinations on several hundred new-borns show the normal coagulation time ranges from five to nine minutes; the bleeding time from two to five minutes. In cases of hemorrhagic disease with varied symptoms such as cerebral hemorrhages, hematuria, melena, and multiple hemorrhages, we have found the time delayed many minutes, and in some cases hours.

Mortality—With the older treatment of drug administration, and the employment of styptics and local measures, the mortality was high. In cases of umbilical hemorrhage, Furth reported a mortality of 100 per cent. Lequeux³ in his monograph observed a mortality of 87 per cent. Numerous statistics vary from 32 to 100 per cent. With newer methods of treatment, this rate has been lowered very greatly. We have, however, no extensive tabulation from which to quote percentages. A very great factor in treatment is the duration of the disease—the earlier blood therapy is employed, the greater is the percentage of recoveries.

Treatment—In the treatment, we have employed blood by direct transfusion, injection into the superior longitudinal sinus, and subcutaneously. The two former methods are difficult, but best if there has been a great loss of blood. But if the hemorrhagic condition is recognized early, subcutaneous injection has proven entirely satisfactory. The technique requires a healthy donor, from whom blood to the amount of 30 c.c. is obtained by venipuncture, and this immediately injected under the infant's skin. For this method, blood grouping is not necessary. The injection is repeated every six to twelve hours until the bleeding is checked or the blood studies give normal findings. In our cases, we have succeeded in getting the bleeding and coagulation times down to the normal range.

CONCLUSIONS

1. Hemorrhagic disease of the new-born is of frequent occurrence.
2. The disease depends upon changes in the blood which produce a delayed coagulation time and a prolonged bleeding time.
3. We have a simple method for determining these factors.
4. Hemorrhages may be concealed; blood studies may give a clue to diagnosis earlier than other symptoms.
5. Blood therapy by subcutaneous injection is a simple and effective treatment, if employed early.
6. The coagulation and bleeding times should be determined in all new-borns presenting any symptoms.

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CESAREAN SECTION*

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In dealing with the subject of Cesarean section we meet with a great variance of opinion as regards the indications and the type of operation to be performed.

The majority of obstetrical cases are not seen primarily by an obstetrician but by the general practitioner. The methods of handling these cases by an obstetrician and a general practitioner may be far different.

The necessity of an early diagnosis and an accurate knowledge of the conditions present is of prime importance.

An accurate history of the case often guides us in our decision.

The mortality for Cesarean section has been reduced in the past few years due to better technique, and to a more accurate and early diagnosis of certain pathologic conditions. However, the morbidity is still too high.

In recent years the indications for this operation have been extended and in some cases, probably a little too far. With the use of the x-ray for certain borderline cases the situation has been cleared up to some extent. We have been able to ascertain deformities of the pelvis, also of the child, especially monsters and hydrocephalous, which we were not able to diagnose formally.

There is very little difference of opinion in regard to certain indications for this operation.

Broadly speaking the indications are divided into two classes:

1. Absolute.
2. Relative.

Of the first we are certain in every case.

The absolute indications are:

1. Contracted pelvis or where the C. V. is less than 6.5 cm.
2. Abnormally large baby in good position, but where the presenting part will not engage in the pelvis.
3. Neoplasms of the pelvis that are large enough to present engagement.
4. Abruptio placenta when the patient is not in labor.

It is in dealing with the relative indications that careful judgment must be used. The most common mistake in these cases is deciding too late that Cesarean section is really necessary.

The more common indications are:

1. A moderately contracted pelvis with a large baby.
2. Placenta praevia.
3. Eclampsia (early).
4. Threatened rupture of the uterus.
5. Previous Cesarean section for other reasons than contracted pelvis.
6. In some cases of faulty presentations, as occiput posterior and transverse.
7. Repeated death of fetus at previous labors, where labor was abnormally long.
8. Primipara past thirty-five years of age and desirous of children with doubtful outlook for vaginal delivery after test of labor.
9. Irregularity of fetal heart tones during early labor, due to pressure on the cord, after the usual treatment fails.
10. Breech presentations in primipara with large fetal head.
11. Neoplasms of uterus, ovaries, or pelvic bones.
12. Recto vaginal and vesico vaginal fistulas.
13. Cicatricial tissue of the vagina, and of the cervix, preventing dilatation.
14. Vento fixation of uterus.
15. Uterine inertia.
16. Broken compensation of the heart.
17. Prolapse of the cord either before or early in labor where the cervix is not effaced or dilated.

In dealing with any of the relative indications the obstetrician must be guided by the conditions present, especially whether the patient is in the home or a hospital, the skill of the operator, and the question of assistance.

In a general way, we must decide whether abdominal delivery offers better chances for both mother and child than delivery from below.

There has been much discussion and difference of opinion in regard to a number of the relative

*Presented before the Hardin County Medical Society.

indications, especially placenta prævia, eclampsia and heart cases.

In regard to placenta prævia I believe if we find the placenta covering or nearly covering, the internal os, and the baby viable, we are justified in performing a Cesarean section, especially if under favorable conditions.

If a patient has to be moved a long distance, or is bleeding profusely, it is better to do a Braxton Hicks version, in order to save blood and control the hemorrhage. Even here some obstetricians prefer the use of the rubber bags to the version operation.

In those cases of eclampsia that do not respond to proper treatment, even during the prodromal stage, Cesarean section must be taken into consideration. Where convulsions are occurring frequently in spite of all efforts to control them, especially when the patient is not in labor, or effacement and dilation is practically nil, then Cesarean section offers the safest and easiest way of terminating pregnancy. However if labor is well advanced it is safest to deliver from below, for we must remember, that all eclamptic patients are very poor operative risks.

If a Cesarean section is to be done on these patients it is sometimes best to consider a local anesthesia.

Heart cases offer a great problem, and we must take into consideration the exact physical condition of the patient, and whether the heart is compensated or not. Whether it will stand the strain of a long tedious labor and also, the question of sterilization.

I make it a point to digitalize all patients with broken compensation, and have them rest in bed at least three weeks before I do a Cesarean section. I sterilize these patients with decompensated hearts at the time of operation.

These patients like all other heart cases stand an anesthetic very well, the choice being either ether or gas oxygen. The operation can also be done on patients who are not of a nervous temperament under a local anesthetic, one-half of one per cent novocain, with ten drops of adrenalin to the ounce, being the usual one.

The contraindications to Cesarean section are:

1. Where the patient has become exhausted by a long labor, and the membranes have long been ruptured.
2. Where there have been intrauterine manipulations or numerous vaginal examinations.
3. Where there have been vaginal examinations of questionable technic as to asepsis.
4. Where there is an elevation of temperature.

5. Where there is a pus discharge containing virulent microorganisms.

Even under some of these adverse conditions Cesarean section is often performed, and the patients make a good recovery. We must expect however that the mortality and morbidity will be increased.

Since the introduction of the low cervical Cesarean section (laparotrachelotomy) a great number of these cases make uneventful recoveries.

I do mean to say that we are justified in operating all cases or that all infected cases would recover, but it certainly has enlarged the indications and lowered the mortality and morbidity.

The classic Cesarean gives excellent results if done early and in selected cases, the same is true of the low cervical, but we feel justified in operating a number of cases now, that before, would have terminated in craniotomy or embryotomy.

Many modifications of the low cervical operation have been proposed. All have the same object in common, that is to avoid the peritoneal cavity as much as possible, and to place the incision entirely in the lower uterine segment. The idea is that the greatest dangers of immediate and remote complications come from opening the peritoneal cavity, and that an incision in the lower uterine segment will obviate rupture of the uterus in subsequent pregnancy or labor.

Certain anatomic changes occurs in the lower uterine segment, and the overlying peritoneum and bladder during pregnancy. The softening and loosening of the peritoneum and pelvic connective tissue and the development of the lower uterine segment being the most notable changes.

The technic is a little more complicated than the classic operation and will be shown in the slides following.

TECHNIC

The operation is much easier and simpler if the patient has been in labor for some time, in order to thin and lengthen the lower uterine segment.

The usual surgical preparation of the vulva is made and a catheter is left in the bladder, Trendelenberg position. A median incision is made about 14 or 15 cm. long beginning at the pubis. One ampule of ergot is now given intramuscular.

The fascial incision is made 1.5 cm. to the right or left of the linea alba, the rectus muscle is then drawn from its sheath at the middle, and the peritoneum opened in midline.

Here care must be taken not to cut the bladder. A large gauze pack surrounded by rubber dam is packed around the uterus. A cross incision is made in the peritoneum, about 2 cm. below its

firm attachment to the uterus, and extending about 5 cm. on either side.

The lower flap is reflected downward carrying with it the bladder. The upper flap is pushed upward to a point of the intended uterine opening.

After the bladder has been pushed down far enough to expose a surface sufficient for the child's delivery, the upper and lower poles of the area are grasped by Allis forceps, and the hooked knife is passed into the uterus at the upper border of the lower segment. The knife is turned laterally and brought out at the lower pole close to the Allis forceps. The uterus is now cut upward with a slow sawing motion. The blood and liquor amnii are now sucked out of the operative field by means of a vacuum pump.

This keeps most of the spill from the abdominal cavity, which lessens the danger of peritonitis and also gives the operator a clean field.

One finger is now inserted in the child's mouth, and the face brought forward, and the head delivered with forceps, or the head may sometimes be delivered by making pressure on the sides.

Either the suction pump, or a piece of gauze covering the finger may be used to clean the mouth and throat before delivery of the head. One ampule of pituitary extract is now given directly into the uterine muscle.

The placenta usually separates with two or three contractions, if it does not, then Crede expression, or manual removal is employed. If there is any bleeding from the cut edges of the uterus, or uterine sinuses, they are grasped with tongue forceps to save blood.

A temporary dry pack is now placed in the uterus and the lower uterine segment is sewed up. Number 2, twenty day chromic gut is used, the first layer goes down to the mucosa, but not through it, the second layer finishes the muscle. The fascia is united with the third row of sutures, which are placed so the sides overlap.

The upper flap of peritoneum is pulled down over the upper one-third of the fascia and fastened with a few interrupted stitches. The lower flap carrying the bladder is pulled up over the upper flap, and closed with number one continuous catgut. The patient is removed from the Trendelenberg position.

The pack is now removed from around the uterus and all blood wiped out. The usual toilet is made and the abdomen closed in layers.

The after care of the patient is equally important as the operation. Special attention must be paid to the bladder. It must be emptied every six hours. If not, there is great danger of the stitches in the transverse incision of the periton-

eum giving way, also danger of hemorrhage, or a hematoma.

The majority of cases we catheterize for a few times, after which there is usually very little trouble urinating. The patient is given one-fourth grain of morphine per hypo. before leaving the operating room, and it may be repeated in four hours if found necessary. It is seldom necessary to give more than two doses. The patient is given a few sips of warm water after four hours. If no marked vomiting occurs they are then given plenty of water. For the first twenty-four hours the diet is liquid, second twenty-four hours light, and then a general diet. The head of the bed may be elevated, or the patient placed in a semi-Fowler position. I prefer enemas for emptying the bowels. In those cases that suffer from severe gas pains the dumb bell or rectal tube is used.

RESULTS

By this method of Cesarean 148 cases have been delivered. None of babies died. Two were dead before operation, both from abruptio placenta.

One mother died on the fifth day from peritonitis.

Of the 148 cases, 54 had a temperature of 100.4 for less than twenty-four hours; 9 had a temperature of 100.4 or over for three days; 17 had 100.4 or over for more than 3 days.

There were three cases of phlegmasia alba dolens of a mild form; 5 cases of pyelitis, one of which had a recto-vaginal fistula from a previous delivery; also a marked albuminuria before entering the hospital.

In nine cases the wound suppurated, one required vaginal drainage, nine had bronchitis and bronchopneumonia. Vomiting has been an unimportant complication.

Four cases have been operated the second time. One had a good test of labor and was terminated with forceps.

I believe these results speak highly for the low cervical operation as it has the following advantages:

1. The lower portion of the abdomen is more resistant to infection.
2. The cervix stands infection better than the fundus, because it is more used to it.
3. The cervical wound is unaffected by after pains.
4. The cervix heals better than the fundus, because of active involution and fatty degeneration of the uterine wall.
5. There is less danger of leakage of lochia, and better control of infection if it occurs.
6. Less chance for formation of abdominal adhesions.

7. The possibility of rupture of the scar in subsequent labor is reduced to a minimum, and if it should occur it is in a bloodless portion of the cervix.

8. The test of labor can be given without fear in subsequent labors.

9. There is less danger of abdominal hernia.

CONCLUSIONS

For the reasons stated we prefer the low cervical operation where abdominal delivery is indicated. Certain cases as very obese women, not in labor, marked pelvic adhesions, and ventro fixation, offer technical difficulties, and classic Cesarean will be easier.

The technic of this operation is being rapidly improved, and the results are so gratifying, I think the general surgeon should learn to do it.

It is one of the great advancements of obstetrics in recent years as it has increased the indications, and lowered the mortality and morbidity.

THE GOITER PROBLEM*

JOHN W. SHUMAN, F.A.C.P., Sioux City

The diagnosis and management of goiter composes one of the great problems confronting the physician today. Goiters are of two main types, simple and toxic. By simple goiter is meant the colloid and adenomatous types, while toxic goiter embraces the toxic adenomatous and exophthalmic goiters. Our first duty is to practice the prevention of simple goiter. The important and primary lesion of this disease is within the gland itself—lack of the iodine content which causes the first noticeable change—hyperthrophy of the thyroid gland. In toxic goiter the forces which cause it are outside of the thyroid—the increased functional activity being secondary—which fact will account for some of the recurrences following “surgical cures.”

Because the thyroid gland is easy of access and withstands operative attacks fairly well, “goiter surgery” is overdone. From the clinics of Crile and Mayos, come many worthy studies concerning goiter, but they all have to do directly or indirectly with surgical management. Medical management with them seems only necessary to classify and get the goiterous patient ready for an operation. However all doctors are agreed that colloid goiter should be treated medically. This was also true of the adenomatous goiter until marked toxic symptoms developed; that is to

say until last month at the A. M. A. meeting, when some “leading surgeons” took the stand that “like the appendix the thyroid gland should be removed before it gave off toxic symptoms.” This is malpractice.

There is some definite association between simple and toxic goiter and I believe that by eliminating simple goiter we will eliminate a great deal of toxic goiter, especially the so-called secondary exophthalmic and toxic adenomatous goiters. Patients who have none should be kept from developing goiter; and those who have colloid and adenomatous goiters from developing toxic symptoms; also the patients with mild toxic symptoms should be managed so that they will not become physical and mental wrecks.

PROPHYLAXIS AND TREATMENT OF SIMPLE GOITER

Studies by David Marine, of our country, and Klinger, Oswald of Switzerland have proven that simple goiter in man can be prevented by the proper administration of iodine. Two grams of iodide divided into ten doses and administered twice yearly will prevent simple goiter. (Marine.) A personal communication from David Marine last week ended with the remark “that simple goiter is the easiest and cheapest of all known diseases to prevent is absolutely certain, and I am glad to see our best type of physicians are daily giving more attention to hygiene and preventive medicine.”

During the past four months while examining for “the school clinics” of Woodbury County we found 8 per cent of the children had symmetrically enlarged thyroids, which transmitted the soft granular feel of colloid goiter. These children should have any focus of infection cleared up, the standard of their general health raised by a proper social, dietary, exercise, and hygienic program. They should also receive iodine under competent medical supervision.

During puberty, pregnancy and the menopause our female is most likely to develop goiter. During these periods, habits, constipation, environment, etc., play their role and the attending physician can do much to maintain a normal “harmonic balance” if he will. After competent medical treatment has failed surgical treatment is necessary when:

First—There is great and progressive deformity.

Second: There is evidence of malignancy.

Third: There are disturbing symptoms of pressure from the goiter (often in the thorax).

*Addressing the Annual Meeting of the Marshall County Clinic held June 15, 1922, at Marshalltown, Iowa.

THE MANAGEMENT OF TOXIC GOITER

Symptoms of hyperthyroidism should not be operated for until medical treatment has been thoroughly tried. If a fair degree of cooperation can be secured early toxic goiter can be cured. Strict individualization is essential. Proper medical attendants, and correct social atmosphere, diet and hygiene will yield the desired results. Many believe toxic goiter a self-limiting disease. Most of us have seen patients with "burned out" thyroids after five or six years of toxicity, having received no prescribed treatment.

The x-ray has proven of inestimable value in early toxic goiters. Some assert the effect is psychic. Will someone estimate the psychic element entering into the "surgical cures" of this disease or in many of the oft committed "gastric, kidney, uterine, etc., stringing operations?" Unless one understands nervous folk he should not treat them. It requires sympathy, patience, tenacity, tact and knowledge to treat toxic goiter. The patient affected with toxic goiter presents complex pathology.

Rest is the treatment for toxic goiter, early or late. The extreme toxic goiter often really produces a cure by absolute rest. It drives the patient to a so-called "nervous breakdown" and that patient goes to bed and stays there for perhaps a period of three months to gradually convalesce with a fair degree of health. Our clue then is to early diagnose toxic goiter, rest the patient's body and mind, force water into the system, feed a restricted and mainly a vegetable diet and administer those drugs which have been known to cut down the activity of the thyroid gland. Forchheimer obtained good results for more than thirty years with a gelatine coated pill administered four times daily, containing five grains of quinin hydrobromate and one grain of ergotin.

If a "normal balance" is regained it should be maintained. If this cannot be secured and relapses occur we are justified then in calling on our surgical colleague to cut down the thyroxin output by operative interference, but not until we have exhausted all our resources without exhausting the patient. That surgery is a logical and scientific mode of treatment for exophthalmic goiter is fully admitted. It is to be remembered that the low mortality of "goiter surgery" comes from the best surgeons and not from the rank and file of operators. Whether medical or surgical treatment of toxic goiter will be the treatment in the future is given to no one to foresee at the present. Both should work hand in hand for the best interests of all concerned.

PREVENTION OF SIMPLE GOITRE

C. P. Kimball, M.D., director of the Cleveland Clinic, has written in the American Journal of Public Health, vol. viii, No. 2, February, 1923, on the prevention of simple goitre by iodine ingestion.

About 10,000 girls were examined during three years in the Akron schools, and about half of them elected to take the prophylactic dose of three grains of sodium iodide in the drinking water once each day for two weeks in the spring and fall. Not a single normal girl of those taking the prophylactic dose developed thyroid enlargement or goitre, although in the control series 27.6 per cent of those without goitre in the beginning developed goitre.

This year, the author reports, that schools in certain towns are using chocolate tablets, each containing ten milligrams of iodine in the form of organic iodide.

He concludes that in the endemic goitre districts every girl during adolescence and every woman during pregnancy should keep her thyroid saturated with iodine.

HONORS TO DR. WELCH

At the congregation of the University of Cambridge, England, held on June 12, the honorary degree of Doctor of Science was conferred upon Dr. William Henry Welch, director of the School of Hygiene and Public Health of the Johns Hopkins University.

DAMAGES ORPHANAGE

Damage to the extent of about \$20,000 was inflicted on the Christian Home Orphanage at Council Bluffs, Iowa, by floods from excessive rains and cloudbursts on the nights of September 28 and 29. Every building at this great institution was damaged, the heating, lighting and power plants rendered useless for several days, and the store rooms in the basements of the buildings were flooded and thousands of dollars worth of supplies ruined. This is the worst catastrophe that has ever befallen this work, and comes as a serious blow when the institution was already struggling to free itself of debt. This institution is non-sectarian, receives orphan and destitute children from all parts of the country and is supported entirely by the voluntary contributions of charitable people. It is appealing to the public for a Christmas offering to help overcome the losses by the recent floods and to meet running expenses in the daily care of two hundred and fifty inmates. We have had calls from those in distress in foreign climes and have responded to them. Here is a good work right here at home that has met serious trouble and is now asking us for help. Let all send something at Christmas and help to put the home of those little children back on its feet. Address The Christian Home Orphanage, Council Bluffs, Iowa.

The Journal of the Iowa State Medical Society

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THE DES MOINES MEETING OF THE TRI- STATE DISTRICT MEDICAL SOCIETY

About 1500 physicians registered at this meeting—a much larger number than was expected—but were cared for without confusion or change in the original plan.

The program as published in the October number, was carried out in full, and so smoothly did everything run that nothing but expressions of enthusiasm were heard.

The plan of operation of this Association is quite different from any other and occupies a place not heretofore filled. It has no laws or arbitrary rules, except as to membership. As Sir William Wheeler facetiously expressed it, not having rules, or laws, or government, especially appealed to him as an Irishman.

From seven a. m. to some hour in the afternoon or evening, Diagnostic Clinics were held. Following came papers in the form of a review of the subject of the clinic. Through the activity of the local profession, groups of patients were gathered and examined by the leader of the respective clinics, in private, and then grouped on the stage and the various phases of the disease pointed out by the lecturer and the method of treatment of the particular patient indicated. For instance, in the diabetic clinic under Prof. Joslin, Dr. Winnett had gathered near fifty cases in years ranging from eighteen months to seventy years. Certain cases had had the disease one year, others five years, ten years, twenty years, and Dr. Joslin pointed out certain features of interest and importance, as a lecturer on art with a group of

paintings would do. No one referred to his watch to observe the passing of time, so deep was his interest.

In the Goitre Clinic a group of cases sat before Dr. C. H. Mayo having been examined in private) and a most absorbing discussion on goitre was presented. Likewise on tumors of the breast, by Dr. Erdman of New York City. At a later hour the subject of this was reviewed in a more formal paper or discussion. Space will not permit a review of the work of about seventy-five of the most famous names in the medical and surgical profession of the United States and Canada.

All the clinics and discussions were held at the Women's Club building, or what was formerly known as the Hoyt Sherman Place, an ideal building for the purpose. The auditorium where all the clinics and discussions were held had a seating capacity of about 1200 and the acoustic properties were such that those who sat in the back seats could hear as well as those who sat in front. It was rare indeed that a vacant seat could be found in a few minutes after the clinic began. Plate dinners were furnished. As the work was almost continuous from 7 a. m. to 10 or 11 p. m., when a doctor was hungry he could slip out at the brief intermissions and secure a very satisfactory dinner. No one could be found who had ever attended an equally profitable medical meeting.

An interesting fact which the writer observed was the deep interest manifest by the people of Des Moines. This gathering of the great men in the medical profession was the subject of conversation in all ranks of society and the contrast in the work and the personnel of this group of men with the gathering of the "cults" which so often favor Des Moines, was very striking, even to the man on the street. The advantage of this gathering to the profession of Des Moines will be difficult to estimate, but certainly great. The people of Des Moines, as everywhere, will measure the profession by what its members do and the spirit it manifests.

We must speak of the work of the Polk County Medical Society in arranging for this meeting. The committees appointed cooperated in a most admirable manner and every member so far as we could ascertain contributed in a most cordial and substantial manner to the entertainment of the visitors. This includes the wives.

It is not our purpose to mention the names of our own distinguished members, but we must not omit mention of our foreign guests, Sir Robert Falconer, president of the University of Toronto; Sir William De Courcy Wheeler, president of the Royal College of Surgeons of Ireland, Dublin; Dr.

Charles F. Martin, dean and professor of Medicine McGill University, Montreal. We must also mention Dr. Ray Lyman Wilbur, president of Leland Stanford University and President of the American Medical Association.

We have called attention to the place filled by this organization. It would seem now that the field of medical organization is full. The unit of organization is the county medical society, followed by the state medical society, one for local and the other for state jurisdiction, no other organizations can fill their places. Then comes the American Medical Association for national purposes, and which cannot be reached except through the county and state societies. The American College of Surgeons and a corresponding association of physicians, which serve the purpose of standardizing surgery, medicine and hospitals with operative and hospital clinics, and last comes the Tri-State District Medical Association for dry diagnostic clinics. All of these associations can only be reached through the county and state societies.

The most important thing we can say is in relation to our county medical societies, not merely as a means of reaching the above mentioned societies, but for the society itself. The spirit of medical society organization must begin at home. The physician who is not affiliated cannot feel at home in any organization. When it was announced that no one could register without his state society certificate, the homely card was looked for with considerable anxiety, and as no one could gain admittance without his badge of registration, the rule could be easily enforced.

Dr. Wm. B. Peck again showed his fitness in managing a great undertaking. It may be said, however, of every officer, that he filled his place with marked efficiency and enthusiasm. As much could be said of every member. We feel sure that every exhibitor received full attention and was kept busy explaining the merits and advantages of the things he had to sell and we trust made many valuable acquaintances. It must be said that there is great advantage to the profession in bringing an exhibitors' clinic in easy reach of the members.

HEALTH EXAMINATION

The reexamination or periodic examination of apparently healthy individuals is not new, but has been discussed in one form or another for many years. The thought is based on the fact that there are some forms of disease that begin in an insidious manner and do not manifest symptoms

until the disease has reached an incurable stage. Transportation companies have realized this fact for many years, but on account of the prejudice of labor unions, the examinations have been limited to the ears and eyes. Even this examination met with much opposition until it was made clear that the examination was not for the purpose of disqualifying men, except in extreme cases, but for the purpose of improving vision with glasses. For the past fifteen years we have examined some 300 annually in this limited way and feel sure from our observations, the examination could be extended, if it was voluntary and at the expense of the transportation company and the record was made confidential, and limited to the inspection of the medical department.

The important educational institutions, the larger colleges and universities, have been making these examinations for several years—the record, of course, confidential—to the great advantage of the student in his subsequent career.

Some insurance companies have taken up the question of periodical examination of their policyholders, as a means of guarding their risks, and will probably be in the near future the settled policy of the larger companies.

The advantage of periodical examination of the general public has become so apparent, that the medical press and some of the lay press have taken up the matter seriously, and led the House of Delegates at the St. Louis meeting of the American Medical Association to consider this among other welfare measures.

There are certain dangerous forms of disease that appear in such an insidious manner, that when the symptoms have led to the consultation of a physician, the disease has made such progress as to place it beyond the means of cure. This is particularly true of certain forms of Bright's disease, diabetes and syphilis. It not infrequently happens that the first symptoms of constitutional syphilis are of the nervous system. It is well known that when neurosyphilis has reached a recognizable stage, that there is small chance of cure.

It is not probable that a large per cent of the lay public will at once apply to a physician for a physical examination, and it is also probable that the advocates of the various cults will antagonize the plan, and there will be no small part of the suspicious public who will attribute this plan of examination to selfish motives on the part of the profession to increase their income. It will no doubt require years to convince the public that the measure is for the public good, and it will require a carefully planned method of approach, the

confidential nature of these examinations must be emphasized, for obvious reasons. The examination of college students should have considerable influence and the personal influence of the family physician should be an important factor, also the cooperation of the insurance companies in their efforts to save their risks. There should be a very important influence from men holding important positions in business and industry, and among professional men, with whom vigorous health and prolonged days of activity are important assets.

At the St. Louis meeting the following resolution was adopted:

Whereas, The need and value of periodical medical examination of persons supposedly in health are increasingly appreciated by the public, it is recommended by the Council on Health and Public Instruction that the House of Delegates authorize the Council to prepare suitable forms for such examinations and to publish them in The Journal of the American Medical Association; and that the county medical societies be encouraged to make public declaration that their members are prepared and ready to conduct such examinations, it being understood that the indigent only shall be examined free of charge and that all others are expected to pay for such examinations.

Dr. R. L. Wilbur, president of the American Medical Association, referred to the necessity for periodical physical examinations of all people, in his presidential address at San Francisco this year.

Dr. D. B. Armstrong, executive officer National Health Council, states:

A committee of the American Medical Association has prepared excellent forms which can be obtained at cost price from the association headquarters, 535 N. Dearborn street, Chicago, Illinois. A reprint by Haven Emerson, M.D., on the same subject, outlining suggestions for such examinations, is also available at the American Medical Association headquarters.

The National Health Council, directly or through the cooperation of other agencies, has prepared a pamphlet for distribution to the public, two excellent posters, a set of thirty lantern slides with lecture outline included, and a moving picture film. With the exception of the latter, which is available for free distribution, all of the other material is sold at cost price.

The members of the National Health Council include the following organizations:

American Association of Industrial Physicians and Surgeons.

American Child Health Association.

American Public Health Association.

American Red Cross.

American Social Hygiene Association.

American Society for the Control of Cancer.

Conference of State and Provincial Health Authorities of North America.

Council on Health and Public Instruction of the American Association.

National Committee for Mental Hygiene.

National Committee for the Prevention of Blindness.

National Organization for Public Health Nursing.

National Tuberculosis Association.

United States Public Health Service.

Women's Foundation for Health.

SUPPLEMENTARY REPORT OF THE COMMITTEE ON MEDICAL DEFENSE

On checking up our records with Mr. Dutcher at the request of the new Medical Defense Council of the American Medical Association, we find some interesting facts not included in our annual report, that the members of the Society would like to know. We shall omit names, the space being represented by a blank line.

It will be remembered that claims to the amount of \$2,261,669, have been made against physicians in Iowa since 1909 and the following will represent how much has been paid on these claims.

Since the establishment of the medical defense ninety-five cases that have been commenced have been dismissed by the plaintiff, many of them before trial, some of them after trial has been commenced, and some of them after the court had announced its intention to direct a verdict.

Forty-eight cases have been tried, resulting in a final judgment for the defendant. Only four verdicts rendered against defendants have been paid, and these four aggregate \$1400. This does not include the case of * * * vs. * * * which was tried in the lower court before our medical defense was established but which we appealed and it was affirmed in the amount of \$2800. This does not include the * * * case in which there was a judgment of \$750 which has never been paid.

I find that included in the \$15,475 of verdicts rendered against defendants, one is for \$6000 rendered against * * * now pending on appeal. This sum also includes the verdict for \$3500 against * * * which the supreme court reversed and the case has been dismissed. It also includes the \$1100 verdict against * * * which was reversed on appeal.

Twenty-nine cases have been settled for an aggregate amount of \$11,433. Among these cases settled is the * * * case \$2500; and \$1350 paid in the case of * * * vs. * * *. The other amounts were small and some of them were

amounts subtracted from the claim of the plaintiff in cases where the plaintiff had brought suit for his bill and a counterclaim was filed for malpractice. In these cases sometimes the doctor refused to accept a less amount for his bill in consideration of the dismissal of the counterclaim.

INDEMNITY DEFENSE INSURANCE AGAINST MALPRACTICE

The California State Medical Society some years ago adopted an indemnity plan by which judgments were paid out of the medical defense fund, but it was found that to do so would greatly increase the dues and create criticism and dissatisfaction. The Society has now abandoned the plan.

The Iowa State Medical Society never seriously contemplated adopting an indemnity plan, for the reasons that have led California to give it up. Before we could adopt indemnity, commercial malpractice insurance companies succeeded in securing an act that would have made it impossible for us to do so without incorporating as an insurance company. We have therefore continued our original plan of conducting the defense and paying the attorney fees. In view of the hazard of the practice of medicine and surgery and the more or less danger of judgments, we feel disposed to advise our members to carry indemnity policies in commercial companies and we join with them in the defense, and to meet certain prejudice that might influence the jury if it was known that a judgment was to be paid by a corporation, we have arranged to appear for the defendant and not the indemnity company, and make a joint defense, much to the advantage of all parties concerned.

It is true that evidence to show who pays the judgment is inadmissible, yet the plaintiff's attorney generally tries to get the information to the jury.

DR. C. A. L. REED OF CINCINNATI TAKES UP ACTIVITIES OF A PUBLICIST

Dr. Reed, the well known surgeon of Cincinnati, has given up private practice to devote himself to the activities of the publicist.

He was at one time president of the American Medical Association, and will now give his entire time to the "health instruction to the people."

To do this in the broadest and most effective way, I have consented to prepare a series of articles that are now appearing simultaneously in daily newspa-

pers in all the chief cities and many of the smaller cities of the United States.

Dr. Reed is an experienced writer, thoroughly familiar with the needs of the public and knows how to reach the public in a most efficient manner.

DEFEAT OF MEDICAL BILL IN MINNESOTA

Bills for the regulation of the practice of medicine seem to meet with little favor with legislative bodies at this time. We are meeting with a curious state of affairs in regard to medical legislation. There are numerous private gifts to medical institutions for educational purposes and for medical research, there are also generous legislative appropriations for the same purpose, but when it comes to the practice of medicine, we are falling back to the time when the public selected their physician without regard to qualifications. No one seems able to explain this anomalous condition.

The plain spoken "Journal-Lancet" admits that something has gone wrong with the medical profession, perhaps a lack of thorough organization and indifference. Dr. Jones knows if any one does. He thinks it might be wise to include doctors who do not give full value, or, at least, make a reasonable effort for reasonable compensation.

YELLOW FEVER AT BUCARAMAUGA, COLOMBIA

An epidemic of unknown origin at Bucaramanga led to sending a group of the International Health Board to investigate. The authoritative diagnosis of yellow fever was received and the chief quarantine officer, Dr. W. C. Rucker of the United States Public Health Service, put in force the quarantine restrictions necessary to the protection of the Canal Zone. For the present the origin of the epidemic, it is said, must be regarded as a mystery.

At the request of the surgeon general of the United States Public Health Service, Dr. W. C. Rucker, chief quarantine officer, was detailed by the governor of the Panama Canal to make an inspection of certain ports in Honduras, Guatemala and British Honduras.

Thus it will be seen how carefully the United States Government looks after the health and safety of its Central American interests.

CANAL TOLLS FOR SEPTEMBER

We learn from the Star and Herald, Panama, R. P., of October 3, 1923, that the total transits through the Panama Canal for September were 413; tolls collected \$1,902,873.31, an average of about fourteen ships a day, which paid on an average of about \$4,600 per ship.

IOWA STATE UNIVERSITY NEWS NOTES

Don M. Griswold, M.D.

The first annual Institute of Social Workers met in Iowa City Thursday, Friday and Saturday, October 25, 26 and 27. Discussions of problems of civic hygiene, child welfare work and social center service, led the list of interesting lectures, papers and open forum discussions. Those of the University faculty appearing on the program were: Dr. S. T. Orton, director of the Psychopathic Hospital; Dr. Don M. Griswold, director of laboratories for the Iowa State Board of Health and State Epidemiologist; Miss Helen Stewart, director of school of Public Health Nursing; Mr. E. H. Lauer, director of the Extension Division; Professor F. E. Haynes, Professor E. B. Reuter and Mrs. Grace Chaffee of the College of Commerce; Mr. Hornell Hart, Iowa Child Welfare Research Station; Miss June Lyday, Social Service Department Psychopathic Hospital; Miss Louise Cottrell, Extension Division and P. W. Whiting, Child Welfare Research Station.

Beside these University faculty members, other speakers and authorities not connected with the University were on the program. Mr. H. S. Hollingsworth, secretary Associated Charities, Des Moines; Mr. Ralph Reed, president Iowa State Conference of Social Work of Des Moines; Mr. Earl Fisk Young, graduate College of Social Service Administration, University of Chicago; Mr. Wilbur Hodson, Russell Sage Foundation, Division of Child Welfare Legislation; Mrs. Mabel Evans, president of the State Association of Probation Officers; Miss Ina Tyler, division of maternity and infant hygiene.

Announcements have been received of the wedding of Miss Marie Whelpley to Dr. Lloyd E. Patrick at Cedar Rapids, October 25. After a wedding trip to Pittsburgh, New York and other points in the East they will return to Iowa City where Dr. Patrick will continue his practice in the specialty of eye, ear, nose and throat. Dr. Patrick is an alumnus of the College of Medicine, State University of Iowa, 1920, and has taken post-graduate work in the Bellevue Hospital N. Y. and in the eye, ear, nose and throat department under Dr. Dean.

Dr. LeGrand Byington, alumnus of the College of Medicine, State University of Iowa, 1919, has been visiting friends and relatives in Iowa City. Dr. Byington as assistant surgeon in the public health department, United States Treasury, is stationed at the present time at Ellis Island, N. Y. His duties consist in the medical examination of immigrants who are detained at Ellis Island and are awaiting admittance into the United States.

The student health department of the State University of Iowa has secured Dr. Oto M. Armstrong of Philadelphia, as an assistant. Dr. Armstrong has had experience in the Woman's Medical College of

Philadelphia, the Boston Dispensary and the Mt. Holly Hospital at Philadelphia.

Dr. L. W. Dean made a tour of inspection of the large medical schools and hospitals of the United States, recently.

A new course for graduate students of medicine who are specializing in diseases of the eye, is being given this year under the direction of Professor Lee P. Sieg of the department of physics at the State University. This course, sponsored by Drs. Dean and Boiler started in October and will continue until January, 1924. The physicians taking the course are Dr. F. H. Fillenworth of the University of Iowa, Dr. Benjamin Sharp of the University of Iowa, Dr. R. D. Proctor of the University of Iowa, Dr. Henry Bender of the University of Iowa, Dr. O. I. Thorburn of the University of Iowa, Dr. C. W. Lawton of the University of Iowa, Dr. I. C. Jenkins of Nebraska University, Dr. J. F. Delph of Northwestern University and Dr. G. M. Thein of Northwestern University.

IOWA ROADS AND BRIDGES

Iowa spent for roads and bridges on her 104,100 miles of public highway, in 1922, \$31,552,374.62.

Primary road expenditures on 6,615.3 miles were \$13,858,727.19.

County road expenditures on 10,889.7 miles were \$4,255,371.21.

Township road expenditures on 86,595 miles were \$6,048,746.67.

Bridge and culvert expenditures on all three systems totals \$7,389,529.55.

THE COST OF MAINTAINING CARS

To form an idea of the expense of maintaining a car department, we may note that the payroll and expenses of one road, the Chicago & Northwestern Railway Co. It has an annual payroll of approximately \$10,000,000.

It maintains about 70,000 freight cars, 2,100 passenger cars and 4,000 work cars, representing a total valuation of approximately \$95,000,000 and requiring an annual expenditure for material and labor of from \$13,000,000 to \$15,000,000.—Northwestern Railway Magazine.

RAILROAD CROSSING ACCIDENTS

Ralph C. Richards, general claim agent of C. & N. W. Ry. Co., has completed some interesting and important statistics in relation to the crossing accidents on the railroads of the United States for the six years ending December 31, 1921. Eighty per cent of the killed and injured were occupants of automobiles, 10,252 killed and 26,692 injured.

Last year the Safety Section of the American Railway Association initiated a movement all over this

country to reduce the number of such accidents. During that year while the number of automobiles increased 24 per cent, the number of such accidents increased 12 per cent.

On the Northwestern Railway in 1921, seventy-five were killed and 277 were injured in crossing accidents. In 1922, fifty-nine were killed and 246 were injured—a decrease of over 20 per cent in killed and 11 per cent in injured.

Of this number in 1922 five were killed and thirty-six injured by running through crossing gates or into the sides of trains.—Northwestern Railway Magazine.

MEDICAL NEWS NOTES

In New York all operators of x-ray machines must first obtain a permit from the health department.

Registration of physicians and dentists does not carry with it the right to operate x-ray machines without a permit in New York City.

Increasing virulence of small-pox during 1922—the case fatality rate of small-pox, or the number of deaths per 100 cases, was five times the figure for 1921. Among 9936 cases reported in 276 cities in the United States and Canada, 495 deaths occurred, or 5 per cent of the total cases. In 1921 only one per cent of the 31,489 cases.

According to Journal of American Medical Association, Joseph Synowski, infant plaintiff in the \$50,000 damage suit against James and Margaret Connell, chiropractors of Jackson, Michigan, for alleged malpractice, May 25, was awarded judgment for \$7,000 in the circuit court.

The suit was the outgrowth of fifty chiropractic treatments given the child about a year ago.

It has been conservatively estimated that Chicago has 200,000 persons suffering from preventable goitre, the greatest number of cases occurring in persons between the age of birth and sixteen years. Seventy-five per cent of goitre is among school children.—N. Y. Medical Journal and Record.

One of the most enterprising state medical journals is "Northwest Medicine." We are informed that some readjustment has been made. Utah, which is so closely related to California, has joined with California in the California State Journal of Medicine. "Oregon, Washington, Idaho and Montana, representing a cohesive area with many common interests" are represented in "Northwest Medicine."

The Journal of the Florida Medical Association calls attention to a fact which we would like to impress on our members; that it is our duty to read the advertising pages carefully and give our advertisers the benefit of our patronage.

We have consistently refused all advertisements of questionable things and have placed the stamp

of approval only after the fullest investigation and inquiry. We have undertaken to make advertising in our Journal of mutual advantage to both advertiser and Journal and we trust that the profession will cooperate with us in maintaining this advantage.

The New Orleans Medical and Surgical Journal, which, after a long and honorable history—now in its seventy-sixth volume—has reorganized as the Journal of the Louisiana State Medical Society and has adopted the advertising policy of the American Medical Association.

We congratulate the Journal on its new policy.

SOCIETY PROCEEDINGS

Boone County Medical Society

The Boone County Medical Society held a social meeting east of Pilot Mound on the Des Moines river Thursday afternoon, October 4. Over forty doctors and their wives and also several nurses were present.

Dr. F. E. Sampson delivered an address on Medical Legislation.

Butler County Medical Society

The Butler County Medical Society held a meeting on October 18 at Allison. The meeting was devoted almost entirely to the study of the heart, the entire society entering into the discussion with enthusiasm.

Following is the program presented: Anatomy and General Symptoms of Cardiac Disease, by Dr. Ensley of Shell Rock. Treatment of Cardiac Disease, by Dr. Roder of Dumont. Appendicitis, by Dr. W. A. Rolfe of Waverly.

R. M. Mayne, Secretary.

Calhoun County Medical Society

On invitation of Dr. McCrary, the October meeting of the Calhoun County Medical Society was held at the Lake City Hospital on Thursday, October 18, where the assembled medics were at noon, served a bounteous chicken dinner by the hostesses. The favors and decorations were appropriate to the hallo'we'en season and the assembled guests were so appreciative of the entertainment that they authorized the purchase of a cut glass or silver memento for the Mesdames McCrary.

Six towns were represented in the business session. At the scientific session, Doctor Heinrichs of Manson presided over a round table discussion of helpful hints in medical practice from each member present.

The society voted to request that the coming clinic of the Infant Hygiene and Maternal Welfare be held in Calhoun county during the month of May, 1924.

The November meeting is to be held at Manson with Doctor McCrary of Lake City in charge of the program.

P. W. Van Metre, Secretary.

Cass County Medical Society

The Cass County Medical Society held its general session, at which the wives and lady friends were guests, at the Calumet Cafe, Atlantic, Friday evening, October 12.

Dinner was served at 6:30 and followed by toasts. Music by orchestra. The News-Telegraph of Atlantic had a representative present as a guest. The threatening weather kept away doctors from Anita, Adair, Massena, Griswold and Exira.

M. L. Stults, Secretary.

Marion County Medical Society

Program Marion County Medical Society held at Bussey, October 12:

Paper—Dr. Bell, Pleasantville.

Paper—Alkaline Therapy in Gastric Hyperacidity, Dr. Eschbach, Albion.

Address—Dr. Sampson, Creston.

Two papers on the application of the Sheppard-Towner law by Dr. B. G. Williams and Dr. Gillet of Oskaloosa.

Paper—Dr. Payne, Monroe.

Botna Valley Medical Society

Program of the Botna Valley Medical Society held at Atlantic, October 24:

The Leukaemias, Dr. W. S. Greenleaf, Atlantic.

Hyper-Thyroidism, Dr. A. R. Anneberg, Carroll.

Treatment of Pneumonia, Dr. B. H. Sherman, Dexter.

Intestinal Obstruction, Dr. F. J. Becker, Atlantic.

The Radical and Successful Treatment of Infectious Wounds, Anthrax, Carbuncles and Gangrene, Dr. J. H. Lowrey, Neola.

Congenital Anomalies in Their Relation to Low Back Pains and Back Injuries, Dr. W. Eugene Walcott, Des Moines.

The Appendico-Biliary Syndrome, Dr. Max. Emmer, Omaha.

Modern Practices in Pediatrics, Dr. Lee F. Hill, Des Moines.

Drowsy Worshipers, Dr. J. F. Lewis, Depue, Illinois.

Iowa Clinical Medical Society

The autumn meeting of the Iowa Clinical Medical Society was held at Iowa City, November 17. The clinics were given at the University and Children's Hospitals by members of the State University medical college faculty.

Officers for the present year are: William H. Rendleman of Davenport, president; Judd C. Shellito of Independence, vice-president; Russell C. Doolittle of Des Moines, secretary and treasurer.

HOSPITAL NOTES

Finley Hospital, Dubuque, is preparing a plan for raising money to build a nurses' home.

SIOUX VALLEY MEDICAL ASSOCIATION

The annual mid-winter meeting of the Sioux Valley Medical Association will be held January 22, 23 and 24, 1924, in Sioux City, Iowa.

R. M. Waters, Sec'y.

MEETING OF THE AMERICAN ASSOCIATION FOR THE STUDY OF GOITER

The first annual meeting of the American Association for the Study of Goiter will be held at Bloomington, Illinois, January 24, 1924. Goiter surgeons, internists, pathologists anesthetists and radiologists are eligible to membership and are cordially invited to attend. Officers of the association are: President, Dr. E. P. Sloan, Bloomington, Illinois; vice-president, Dr. George W. Newell, Burlington, Wisconsin; secretary, Dr. J. D. Moschelle, Indianapolis, Indiana; treasurer, Dr. J. R. Young, Terre Haute, Indiana.

FIELD ACTIVITIES COMMITTEE

The following is a copy of a letter sent by the Field Activities Committee of the State Medical Society to County Societies:

October, 1923.

Dear Doctor:

About this time last year we sent you a letter urging that county medical societies and individual physicians give every possible encouragement and support to the Christmas seal sale which is conducted annually throughout the state by local health organizations affiliated with the State Tuberculosis Association.

In view of the mutual value of such cooperation as was afforded last year and in view of the signal services which have been rendered by the Iowa Tuberculosis Association to the medical profession, I want to recommend it even more strongly this year.

Among the more important of these services are:

1. The Tuberculosis Association represented the State Medical Society about the legislature last winter. Many excellent measures relating to public health were passed, including the provision for \$4,250,000 for the promotion of scientific medicine at the University of Iowa. Through the efforts of the Association's representative all bills which were inimical to the interests of the profession were side-tracked.

2. Through the machinery of the I. T. A. a great deal of publicity favorable to the organized profession was secured in newspapers, magazines and at conventions.

3. An entire issue of the Campaign, the joint publication of the Board of Control of State Institutions and the Iowa Tuberculosis Association, was "devoted to the interests of the country doctor."

4. The I. T. A. has been and is behind a move-

ment whose slogan is "Consult your doctor early and often."

May I suggest that you convey the contents of this letter to every member of your county society, and ask the men to offer their services as speakers, workers, and in any other desired capacities. As a society the offer of your cooperation as a group to the county or local Christmas seal chairman will be appreciated.

Very truly yours,

F. E. Sampson, Dir.

During the month of December, 26,000,000 Christmas seals will be offered to the public by health workers in every county in the State of Iowa, and a total of a billion seals will be placed on sale throughout the entire country.

The proceeds are used locally for various forms of public health promotion, such as nursing, nutrition classes, the Modern Health Crusade and other means



of teaching health habits in the schools, tuberculosis and child welfare clinics, open air schools, free dispensaries and permanent clinics, milk lunches for school children, instruction for mothers in the care of babies, prenatal care, fresh air camps, distribution of health literature, exhibits and other means of health education.

A minor share goes to the State Tuberculosis Association which uses it for the campaign against tuberculosis and for educational health work similar to the local forms; and five cents on the dollar supports the national anti-tuberculosis movement.

The campaign this year is based on hard facts—the showing in dollars and cents the value of public health work.

Among the most striking proofs presented are:

1. The reduction of the tuberculosis death rate in the past fifteen years since the formation of the National Tuberculosis Association from 201 per 100,000 to 99—a decrease of 51, representing a saving of 88,000 lives per year estimated in money value at \$704,000,000 annually.

2. The increase of the average of human life by two and one-half years.

3. In Iowa schools where the formation of health habits through the Modern Health Crusade has been taught for the past three years the percentage of physical defects upon examination has been lowered in proportions ranging from 12 to 35 per cent.

W. L. Bierring.

AN IMPROVEMENT IN DIPHTHERIA IMMUNIZATION

Reports show conclusively that susceptibility to diphtheria is at its maximum in infants of about one year of age, not more than 10 per cent possessing natural immunity.

Beginning at this point, the individual slowly develops immunity against the disease until adult life, when, as a rule, he is immune.

Park and his associates of the Research Laboratory, New York City Department of Health have demonstrated that the old formula toxin-antitoxin mixture which they themselves have popularized contained an unnecessarily large amount of diphtheria toxin and that a reduction of this percentage with a corresponding reduction in the amount of antitoxin used could be made, without materially affecting the percentage of free toxin or its immunizing value. They have announced the introduction of a new formula diphtheria toxin-antitoxin mixture which contains but one-thirtieth of the amount of diphtheria toxin formerly used, and have demonstrated that the new formula is equally effective. They have also shown that in this reduction they have eliminated the one objectionable feature of toxin-antitoxin administration, namely, a protein reaction which sometimes occurred in older children and adults.

The Squibb Laboratories have announced the release to the trade of this new formula under the name of diphtheria toxin-antitoxin mixture Squibb (new formula).

ANNOUNCEMENT OF REMOVAL

The many medical friends of Burroughs Wellcome & Co., will be interested in the removal of this well-known firm to their new building at 9-11 East Forty-first street, New York. This building which is a modern steel framed, fire-proofed twelve story structure is of pure Gothic style.

The firm's general offices for the U. S. A., now installed in the new premises, adequately provide for the growing needs of the business. Suitable arrangements insure rapid communication between these offices and their New York works and laboratories.

A cordial invitation is extended to the medical profession by Messrs. Burroughs Wellcome & Co., to visit their new exhibition rooms at any time to inspect the display of fine chemicals, galenicals and other products for which the firm has been so long and favorably known.

PERSONAL MENTION

We learn from the Cedar Rapids Gazette that Dr. Ruml returned home on the ship that brought the former British premier to this country. Dr. W. Ruml spent some months in Europe under especially favorable conditions as relates to medical institutions. His son, Dr. Bradley Ruml, is a director in the Laura Spelman Rockefeller Memorial of New York City, who visited Europe on business connected with the Memorial and his father, Dr. W. Ruml accompanied him, sailing from New York August 4.

Dr. F. W. Porterfield of Waterloo, who suffered a severe infection recently while operating on an infected arm, is recovering.

Dr. J. A. Jeffrey of Maxwell, suffered a paralytic attack October 3. Dr. Jeffrey is one of the few old time physicians remaining in Story county.

Dr. W. J. Connell of Dubuque, assistant city and county health director, has been awarded a scholarship in the Harvard University Medical School. Dr. Connell has been granted a leave of absence from his duties at Dubuque while taking this special work at Harvard.

Dr. Julia F. Hill of Des Moines, is doing post graduate work in the medical department of the State University of Michigan under the direction of Dr. Albert M. Barrett. After three months' study she will resume her duties as a member of the staff of "The Retreat," giving special attention to occupational therapy.

Word has just been received from Dr. A. M. Pond of Dubuque, president of the Iowa State Medical Society in 1921-1922, that he has decided to cast his lot with the medical profession of the far West and has opened an office in Los Angeles (3200 West Sixth street). Dr. Pond has associated himself with two former Iowa men, Dr. C. E. Conn and Dr. J. W. Shuman, both formerly of Sioux City. The best wishes of the Iowa profession go to Dr. Pond in his new field of endeavor.

MARRIAGES

Dr. Lawrence Smith of Woodward and Miss Muriel Drake of Des Moines, were married at Des Moines, October 9, 1923.

Dr. Henry J. Kaep and Miss Pearl M. DeMuth of Dubuque, were married September 23, 1923.

BOOK REVIEWS

THE MEDICAL CLINICS OF NORTH AMERICA

May, 1923; Index Number. Published Bimonthly by W. B. Saunders Company. Cloth, \$16.00, Paper, \$12.00 Per Annum.

This is a San Francisco number and is introduced by a clinic by Dr. William Fitch Cheney of the Stanford University Hospital, on the Diagnosis of Gall-

Stones, followed by a discussion on the Use of Quinine Derivatives in the Prevention and Treatment of Cardiac Irregularities.

There are other interesting clinics: Cardiac Neurosis, by Eugene Sterling Kilgore of St. Luke's Hospital; Some Unusual Types of Severe Anemia, by Dr. Ernest H. Falconer and Dr. Laird M. Morris. A clinic by Dr. H. Lisser and Dr. Charles E. Nixon on Dyspituitarism and Epilepsy and finally, Psychotherapy of Posttraumatic Neurosis; Lump Sum Settlement.

Like the surgical San Francisco number, is full of interesting matter, only a part of which we have space to consider.

TRANSACTIONS OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA

Third Series; Volume 44. Philadelphia, 1922.

This volume of Transactions of 567 pages is of great interest and value. The introduction is a memoir of M. Howard Fussell, M.D., followed by a memoir of Dr. Charles Winslow Dallas, by James Hendric Lloyd, M.D.

Then comes the annual address by the President William J. Taylor, M.D. The first section of the volume is made up of exhaustive scientific papers by members of the college. We note with pleasure that a western surgeon contributes an important paper. Dr. Donald C. Balfour of the Mayo Clinic, delivers the Mary Scott Newbold Lecture, under the title of Hematemesis.

The Appendix includes the Proceedings of the College, including the section on ophthalmology; the section on otology and laryngology; the section on general medicine; the section on industrial medicine and public health.

The Nathan Lewis Hatfield Lecture was delivered by Thomas Lewis of the University College Hospital, London, England.

The subject, The Action of Digitalis in Cases of Auricular Fibrillation and Flutter.

The S. Weir Mitchell oration, Medicine of the Humanities, by Dr. Charles L. Dana of New York.

Without entering into details it will be seen that this is an exceedingly interesting volume.

NOSOGRAPHY IN MODERN INTERNAL MEDICINE

By Knud Taber, M.D., Professor of Internal Medicine University of Copenhagen, with an Introductory Note by Rufus Cole, M.D., Director of Hospital, Rockefeller Institute. With Twenty-one Full Page Portraits. Paul B. Hoeber, Inc., New York, New York.

The book is one of peculiar interest. Nosography, or the written account, or history of disease, begins with Sydenham (1624-1689), who considered medicine

from a clinical point of view and held that all diseases should be reduced to definite species with the same care exhibited by botanists in their description of plants.

Anatomical studies had reached their highest point of development through the work of Vesalins, modern physiology beginning with Harvey and Malpighi's demonstration of the capillary system, but pathology must wait as being too difficult for the then knowledge of tissue structure.

Sydenham began his work by writing out histories of diseases and in laying down fixed and complete methods of cure for each disease. It was a period of classification, the nosologists of the eighteenth century catalogued and grouped the descriptions, there was little distinction made between a symptom and a disease.

The author records the teaching during the time of Sydenham, Bartholini and Carl von Linné, and passes to the Paris school—Anatomical Diagnosis—which flourished in the nineteenth century led by Pinel and Bichat. Bichat, who may with justice be regarded as the leader, held that each of the tissues could be separately affected, quite different from Sydenham, who classified disease on descriptions and symptoms.

Following Bichat came Bayle and Laennec, and also Corvisart, who taught pathological anatomy in connection with clinical medicine and with him the old era of systematic nosology came to an end.

Later Louis became the leader of the Paris school. This was the great era of French medicine. Andral, Louis, Bretonneau, Bouilland, Cruveilhier, Chomel, Alibert, Rayer, Piorry, G. L. Bayle and A. L. Bayle.

Passing from the Paris school we come to German Physiological Medicine, with John Müller as the leader. Traube set forth the great principle in the German school, as the only means of escaping the uncertainty and confusion which prevailed in pathology. "Experimentation combined with observation can make pathology what it should be, an exact science."

Following came a list of great workers that made the German school celebrated for many years as the center of scientific medicine. The author in this, the third part of the book, reviews the influence of the Paris school based on Anatomical Diagnosis and the associated Physiological Diagnosis of the German school and brings us to the "Bacteriological Clinic" with Pasteur's fundamental experimental work in establishing that a whole series of diseases are produced by certain distinct microorganisms. The work of Widal, of Wassermann, Koch and Ehrlich.

In part five we come back to England and France for leadership, under the head of "Functional Diagnosis." It appears that in Germany there was a gradual emancipation from the Verchow-Traube traditions of animal experimentation, and a broader conception of medicine in the medical centers of the nations.

In the final chapter—part six—Constitutional Pathology in which the whole medical world partici-

pated. C. Lange, a Dane, presented a discussion of pathological heredity. G. Mendel, an Austrian, laid the foundation in biology what is known as Mendel's laws of heredity. Dalton, an American, on what is known as color blindness.

We thus pass from England under the influence of Sydenham and John Hunter and his English associates, including a classification period; to Bichat, Pinel and distinguished groups of workers in the Paris school, known as the period of Anatomical Diagnosis, to German medicine led by Traube, to Virchow and many other great leaders.

The Physiological School of Diagnosis, including an era of experimental pathology. Then the Bacteriological Clinic, led by France in the person of Pasteur and closely followed by Germany. We then return to England, closely followed by France and Germany in Functional Diagnosis, and finally Constitutional Pathology, in which many nations participated. In the later periods America contributed, but rather as a follower.

It cannot be well denied that while Europe has been the leader in medical changes and progress in the past, America, in the present confusion of world affairs, may be looked to in the near future, if not at the present moment.

THE TONSILS

By Harry A. Barnes, M.D., Instructor in Laryngology, Harvard Medical School; Laryngologist, Massachusetts Charitable Eye and Ear Infirmary; Laryngologist, Massachusetts General Hospital; 217 Pages; Second Edition; St. Louis. C. V. Mosby Company, 1923. Cloth, \$5.00.

In the nine years which have elapsed since the appearance of the first edition, much has been added to our knowledge of the tonsils. There is a greater uniformity of opinion and operations for the removal of these organs have been improved and more or less standardized.

The first chapter of the book deals with The Nature of Lymphoid Tissue, the second with the Development of the Tonsil, and the third with the Anatomy and Histology of the Tonsil. The paragraph on "What Constitute the Hypertrophy" is excellent, very much to the point and should be read by the numerous physicians who remove tonsils, simply because they appear enlarged. In the fourth chapter the author gives the Functions of the Tonsils and discusses the various theories. He correctly states that the tonsils should, by all means, be respected as functioning organs, especially in children, and should never be removed without adequate cause, but when such cause exists the loss of their functioning should not be used as an argument against their complete extirpation. The fifth chapter on Pathology and Bacteriology is excellent and the paragraphs on Focal Infections have been rewritten. He states that at the present time there is an unfortunate

tendency to pronounce hasty judgment against one or another of the regions involved with only cursory examination of the others. The tonsils are the most frequently indicted. With a rigid exclusion of sources of infection, a fair percentage of the tonsillectomies now done for the relief of focal infection might be obviated if more serious attention were given to possible source elsewhere. Chapter six deals with Diseases of the Tonsils. Herein he takes up: acute tonsillitis; acute follicular tonsillitis; septic sore throat; acute suppurative tonsillitis; peritonsillar abscess; Vincent's angina; chronic tonsillitis; chronic suppurative tonsillitis; cysts; calculus; hyperkeratosis; tuberculosis; syphilis; diphtheria is barely mentioned. In the paragraphs on Peritonsillar Abscess, he advises removal of both tonsils at the time of draining a peritonsillar abscess and states that he has yet to see any untoward result that would lead him to change his belief as to its safety. This however has not been the reviewer's experience as he has had under his care a patient who died of septicemia following the removal of tonsils at time of draining a peritonsillar abscess. Chapter seven discusses Adenoids and chapter eight, Neoplasma. In chapter nine, Surgery of the Tonsils, the newer operations as well as the old are described at length. Chapter ten on Complications closes the book which is illustrated with numerous plates and illustrations.

This edition bears throughout evidence of careful and thorough revision, with the subjects handled in a systematic way. It is up-to-date and contains new and accurate information in readily accessible form. The book should be in the library of every one interested in tonsils.

E. P. Wein.

CEREBROSPINAL FLUID

By Abraham Levinson, B.S., M.D., Pp. 267, with Illustrations (69). St. Louis, C. V. Mosby Co., 1923.

It is a pleasure to review this work because it measures up so completely to one's ideal of a medical monograph. The subject is of great practical interest to all physicians as well as to the rapidly increasing number of laboratory technicians. The author is splendidly equipped for the task he has set himself because of his large experience and his many original contributions to our knowledge of the spinal fluid. The monograph is very complete in that it contains a short history of the cerebrospinal fluid; this is followed by a chapter on the technique of lumbar and ventricular puncture; then a chapter on the normal spinal fluid and a chapter on the pathologic spinal fluid; following that a chapter on the examination of the fluid for diagnostic purposes; and the book closes with a chapter on the intra spinal treatment. Every chapter ends with an excellent bibliography. The book is splendidly illustrated, the text is clear and concise, and the mechanical work done by the publisher leaves nothing to be desired.

Glomset.

THE FORM AND FUNCTIONS OF THE CENTRAL NERVOUS SYSTEM

By Frederick Tilney, M.D., Ph.D., Professor of Neurology, Columbia University; Attending Neurologist the Presbyterian Hospital and the New York Neurological Institute; Consulting Neurologist, Roosevelt Hospital, New York; and Henry Alsop Riley, A.M., M.D., Associate in Neurology, Columbia University; Associate Attending Neurologist, New York Neurological Institute; Attending Physician, Neurological Department, Vanderbilt Clinic, New York. Foreword by George S. Huntington, Sc.D., M.D., Professor of Anatomy, Columbia University. Second Edition. Published by Paul B. Hoeber. New York, 1923.

This work shows an entirely different mode of approach for the student, from that which was the established method a decade or so ago. Then, the anatomy of the nervous system was by reputation, the hardest lesson to learn, and more often than not, the cervical and brachial plexuses with their communications, for example, were learned by a sheer act of memory, which impression had largely faded by the time that the application of the knowledge was called for in the diagnosis of disease conditions.

By the system shown in this volume, form and function are illustrated by clinical facts, thus rendering the act of learning more interesting, and therefore easier and more certain of retention. When we are shown that a certain nerve trunk has a certain origin and course, and that injury or disease of this point of origin gives rise of certain symptoms, with a case to illustrate all this, the picture penetrates and persists.

Further, the authors present the progressive embryological development of the nervous system in such a way as to gradually prepare the student for the anatomy as he finds it, and to enable him to better understand its functions, and its changes due to injury or disease.

The opening chapter deals with the value of knowledge of the Central Nervous System in the practice of medicine and describes its main division, sensory and motor, somatic and splanchnic, and the way in which these four components cooperate. Then follow the chapters on the embryological development of the C. N. S., a description of the unit of the nervous system, the neurone, and the manner in which the neurones are integrated to form the whole. Directions are given for the exposure of the spinal cord, its anatomy discussed, as well as the functions of its component parts and of the cord itself. The brain is similarly considered in detail, anatomically and functionally.

A glossary and an extensive index form important adjuncts to the book, which is well printed, easily read, and adequately illustrated.

The book adequately presents the advantages of the authors' method of teaching, clinical examples

demonstrating the facts of anatomy and physiology, and should be of great assistance to the physician in interpreting the origin of functional disturbances as well as those due to trauma or organic disease, where the possibility of confusion or erroneous diagnosis is patent. Certainly no more painstaking and careful work has been offered to the medical public, and the authors deserve recognition of their service to the student, which service is given by them as the reason for their effort.—Major H. R. Reynolds, Psychopathic Hospital, Boston, P. H. S.

COLLECTED PAPERS FROM THE WASHINGTON SCHOOL OF MEDICINE

Volume One, 1923; With 347 Illustrations.

C. V. Mosby Company, 1923. Price \$12.00.

The contributions coming out of the liberally endowed university medical schools constitute a valuable feature in medical literature of today. This is as it should be. The endowed laboratories and clinics afford an opportunity not enjoyed by men in private practice to carry out and measure up certain features of work which universities are best prepared to give.

This volume of collected papers, the first of a series promised annually, or oftener, gives a clear idea of what our universities are doing, and we may be well assured that a natural and healthy rivalry will produce a very high class of contributions.

To give an idea of the activities of Washington University: We have before us a volume of 1079 pages, with illustrations, and we are informed if all the contributions were published, four volumes would have been necessary. We are also informed that the selection was not based on merit alone, but on what appeared to meet a general professional need. We are promised the other papers in due time, presumably predicted on the reception of this volume. We sincerely trust that the alumni of these combined great schools and the profession generally, will leave no excuse for not publishing all these papers.

There are some fifty-six contributors to this volume, or perhaps, more, and it will be impossible to notice more than a few. The introductory paper is by Dr. George Dock—so well known—on "The Social Trend in Medicine." A second paper, also by Dr. Dock, entitled "A Visit to a Chiropractic School." A fitting introduction. Dr. Dock then presents a paper on "Focal Infection and Arthritis."

Dr. Ellsworth S. Smith comes next with an interesting paper on "Cardiolysis for Chronic Mediastinopericarditis," with a report of two cases and Review of Literature to date.

Following are a series of heart cases of a highly technical character. "Paroxysmal Tachycardia of Ventricular Origin and Its Relation to Coronary Occlusion," by Dr. G. Canby Robinson and Dr. George R. Hermann. "Errors in the Diagnosis and Treatment of Heart Disease," by Dr. Drew Luten. "An Experimental Study of Incomplete Bundle Block and the Respiratory Period of the Heart of the Dog," by

Dr. Frank N. Wilson, Ann Arbor, and Dr. George R. Hermann.

These are some of the medical papers.

"Some Surgical Aspects of Asphyxia," by Dr. Everts A. Graham. "Plastic Repair of Wounds of the Face and Jaws," by Dr. Vilray Papin Blair.

Then "On Borderland of Rhinology, Neurology and Ophthalmology," by Dr. Greenfield Sluder, also by the same author, "Asthma as a Nasal Reflex."

It appears that in the selection of papers for this volume every department of medicine and surgery are represented and we have attempted to indicate in a way the manner of treatment of a few subjects as outlined.

THE SURGICAL CLINICS OF NORTH AMERICA

June, 1923, Volume III, No. 3, San Francisco Number; Published Bi-Monthly. W. B. Saunders Company, Cloth, \$16.00; Paper, \$12.00 Per Annum.

There are twenty-six contributions to this number which will bring us in close contact with a considerable group of San Francisco surgeons. The amount of material in the 280 pages will render it impossible for us to consider more than a few of the clinics, which will serve as examples of what the number contains.

Excision of the Knee Joint, by Dr. John F. Cowan of Stanford University Hospital, is an interesting exposition of a resort to this operation in a considerable variety of conditions and is entitled to a careful reading.

Dr. Alson Weeks, Surgical Department University of California, St. Luke's Hospital, presents a case of gall-stones obstructing small bowels, successfully removed by operation.

An extremely interesting paper by Dr. Howard C. Naffziger of the University of California, on Head Injuries, Indications for Surgical Treatment, should be carefully read, particularly by surgeons engaged in industrial practice. In this discussion indications showing the reasonable and probable conditions are pointed out with great clearness. The line is drawn between injuries which cause compression and those which involve extensive laceration of brain substance. The slow pulse, high blood-pressure showing compression. On the other hand, rapid pulse, low blood-pressure, with normal or subnormal temperature which rapidly rises, in an injury so severe that the patient shows no signs of reaction, surgical efforts offer but little. In certain compression cases the author favors decompression operation, but not in cases of lacerations, as indicated above.

Dr. Frank Hinman of the University of California Hospital, offers an interesting discussion on The Standardization of Prostatectomy with Reference to the Recent Modification of Young's Technic.

There are other equally interesting papers and discussions which we must pass over.

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